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MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

OCTOBER, 1870.

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MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE, STATISTICAL DIVISION,
Washington, D. C., October 20, 1870.

SIR: I herewith present for publication a digest of the reports upon the condition of the crops for the month of October, with brief notes from reporters thereon, together with various extracts from the correspondence of the Department, the address of the Commissioner at the Illinois State fair, and articles upon variety in southern productions, climate of Southwestern Arkansas, Osage orange as feed for silkworms, the Louisiana rice crop, market prices of farm stock, the drought in England, agricultural statistics of Ireland, diseases of cattle in Europe, wool-growing in Uruguay, the treatment of liquid sewage in Great Britain, scientific notes, meteorology for September, &c., &c.

J. R. DODGE,
Statistician.

Hon. HORACE CAPRON,
Commissioner.

CONDITION OF THE CROPS.

Wheat.—The wheat crop of 1870, in a majority of the States, and especially in those in which this cereal is prominent, is materially less in quantity than the crop of 1869, which was a very large one, notwithstanding the assertions of some croakers to the contrary. The reduction is due, first, to the loss of plants by an unpropitious season for germination and early growth of the winter variety, followed by an open and somewhat variable winter, and, second, to the drought which prevailed with great severity in the Northern and Eastern States. This reduction, as averaged from our local returns, appears to be about 14 per cent. In the several States it is as follows: Maine, 5; New Hampshire, 10; Vermont, 10; New York, 30; New Jersey, 23; Pennsylvania, 13; Delaware, 30; Maryland, 17; Virginia, 9; Mississippi, 17; Texas, 2; Missouri, 10; Illinois, 10; Indiana, 18; Ohio, 14; Michigan, 9; Wisconsin, 20; Minnesota, 15; Iowa, 13; Kansas, 2; Nebraska, 13; California, 15; Oregon, 3. The States indicating an increase are: Massachusetts, 2; Connecticut, 1; North Carolina, 9; South Carolina, 10; Georgia, 10; Alabama, 12; Arkansas, 7; Tennessee, 9; West Virginia, 2; Kentucky, 2. In the early spring the "condition" of the wheat fields pointed to a decrease of 20 per cent. As is usually the case, adverse returns have had a more cheerful aspect as the season advanced, and a result somewhat more favorable to production is now recorded; yet the monthly records have maintained a close correspondence throughout the season, verifying the general correctness of the reports.

The Colorado grasshopper has been very troublesome in the Territories. In parts of Utah farmers are preparing to sow fall wheat extensively, hoping to escape their ravages—in San Pete County, Utah, very little grain has been saved; much land was replanted, and the fields are still green, while frosts have already appeared. In Conejos County, Colorado, not more than half the crop was harvested at the date of the report, and the ground was already covered with six inches of snow.

The average quality of the crop is better than that of 1869. In portions of the Eastern States and in New York the grain was shriveled by dry weather. In Pennsylvania and Maryland, the excessive moisture and high temperature of June were untimely, inducing disease and causing imperfect development. In Virginia, the quality is variable, in some places superior, in others injured by heavy rain while in bloom, some fields suffering from the midge, while occasional injuries were sustained in the stack from wet weather. In the southern wheat belt, including the table-lands of North Carolina and Tennessee, the quantity was in excess of the crop of 1869, but the quality was injured extensively by rains between cutting and thrashing, though many counties report superiority in quality. Smut proved troublesome among careless farmers. Throughout the Ohio and Upper Mississippi States there is an unusually large proportion of No. 1 wheat. Occasional damage from rains while in the stack is reported from the Northwestern States. In Pierce County, Wisconsin, about one-third, all No. 1, was thrashed before the storms, and the remainder was greatly injured, some entirely spoiled. Other counties had a similar experience. The season was comparatively unfavorable in Kansas, on account of the drought in July and August, but less injury was suffered than was expected. The Pacific coast reports are variable. Some counties in California make the quality superior, while others report injuries from rust and inferiority from the immaturity of grain blighted by drought. The early sown fall and spring grain of Oregon is good, while that sown late was injured by the excessive heat of summer.

Among the winter varieties which have succeeded best the Tappahannock is prominently named. It is favorably mentioned throughout the South and West, and has done well among the mountains of Utah.

Complaints of low prices are still heard. Ohio correspondents assert that wheat cannot be profitably grown there at one dollar per bushel. In portions of the Northwest that price cannot be obtained; in Northern Wisconsin 87 to 92 cents per bushel are common quotations.

The fall sowing has been delayed by dry weather, and much of it is slow in germination. This is especially the case in Indiana and Ohio. The fly has begun its ravages in places, and in parts of Kansas the "army worm" has also put in an appearance.

There is yet some old wheat unsold, though the moderately liberal harvest sent most of the surplus to market. Low prices have retained a part of that beyond the Mississippi. Sac County, Iowa, claims to have one-fourth of the old crop still on hand.

Corn.—The corn crop of 1870, unlike those of the two years preceding, is a full one—the best of the past ten years. It is a crop which yields best in our hottest seasons. A large area of the best corn region has had rain enough for its full maturation. The worst effects of drought are seen on the thin, sandy lands of Eastern Massachusetts, reducing the crop 50 per cent. in some fields, while soils of greater depth and better texture give a superior product. Southern New Hampshire has suffered from the same cause, but Maine, New Hampshire, and Vermont,

north of 44°, exhibit better maturity and a greater yield than for several years.

The States of the great corn region, including those bordering on the great lakes and on the Ohio and Mississippi Rivers, have without exception made either a full or a large crop. Illinois, the corn field of the Union, estimated by this Department to have an acreage in maize of 5,237,000 in 1869, figures which proved to be 3 per cent. below rather than above the actual returns of assessors for that year, has this year fully six millions of acres in corn—an area larger than that of the State of New Hampshire. At the low estimate of 35 bushels per acre, the product will reach 210,000,000 bushels. There are intelligent men who estimate nearly a million more for the acreage of Illinois, an average yield of 37 bushels, and a total product of 250,000,000 bushels.

Without reference to increase or decrease in acreage, which was reported in the July number, the average of "condition" is as follows in the several States: Increase—Maine, 10 per cent.; Vermont, 5; Rhode Island, 5; New York, 3; New Jersey, 4; Pennsylvania, 3; Virginia, 3; North Carolina, 12; South Carolina, 10; Georgia, 12; Florida, 6; Alabama, 10; Louisiana, 3; Texas, 1; Arkansas, 16; Tennessee, 22; West Virginia, 10; Kentucky, 15; Missouri, 6; Illinois, 17; Indiana, 18; Ohio, 16; Michigan, 16; Wisconsin, 19; Minnesota, 2; Iowa, 5. Decrease—New Hampshire, 4 per cent.; Massachusetts, 15; Connecticut, 3; Delaware, 10; Kansas, 13; Nebraska, 9; California, 9; Oregon, 5.

The crop has ripened unusually early, without injury from frosts, and is remarkably sound, with exceptions of injury from drought, as in Eastern Massachusetts, where some fields were cut up for fodder, and in Virginia, where a portion overwhelmed by the floods was rendered unfit for use of man or beast. Excessive rains have wrought injury in some parts of the South and in the Missouri Valley, where the rains of September have been very abundant; in Nebraska the rain-fall for the month being about seven inches.

Other grains.—Rye gives a somewhat smaller yield than in 1869. It is grown for pasturage in the Southern States more extensively than usual. In quality the grain is generally good; though not fully up to an average in New Hampshire, Massachusetts, Connecticut, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and Tennessee.

Oats are not generally so productive as last year, except in the South, in Michigan and in New Jersey. There is, also, a like depreciation in quality, in most quarters. An average quality is reported from New Jersey, Delaware, Maryland, Virginia, Georgia, Alabama, Mississippi, Arkansas, West Virginia, Kentucky, Ohio, Indiana, Michigan, and Iowa.

The aggregate product of barley appears to be less than in 1869. The only exceptional States are Georgia, Tennessee, West Virginia, Kentucky, Iowa, and Nebraska. The quality in the West is generally good; below an average in the Atlantic States, and scarcely an average in the Southwest, where it is grown to a very limited extent.

The only States yielding full crops of buckwheat are Tennessee, Kentucky, Missouri, Illinois, Iowa, Minnesota, Kansas, and Nebraska. The aggregate is less than usual.

Beans and peas.—The reports indicate an average product, in quantity and quality, with some local variability. The pea crop, which is one of great importance to the South, has occupied a larger acreage than formerly in North Carolina, Georgia, and Tennessee, but has been somewhat neglected in other cotton States.

Potatoes.—Potatoes exhibit a considerable reduction in yield, which is below an average in all of the Atlantic States to Virginia, inclusive,

and in all Western States north of the Ohio River, the depreciation ranging from 15 to 44 per cent. The crop has been an average one in West Virginia, Kentucky, Tennessee, and Arkansas. Some reduction in quantity is experienced on the Pacific coast.

The sweet potato crop is comparatively a large one.

Sorghum.—While the acreage of sorghum is not very large, the crop is in superior condition, and promises a yield of sirup of fine quality.

Cotton.—The increase in breadth of cotton was estimated in July at 12 per cent., viz., North Carolina, 8; South Carolina, 5; Georgia, 7; Florida, 7; Alabama, 13; Mississippi, 12; Louisiana, 20; Texas, 25; Arkansas, 10; Tennessee 5. The appearance of the crop on the first of October was reported as follows: Below an average in condition—Mississippi, 1 per cent.; Alabama, 4; Louisiana, 8; Georgia, 1; Tennessee, 3. Above an average—Texas, 5 per cent.; Arkansas, 5; Florida, 2; South Carolina, 4; North Carolina, 7. Combining the elements of acreage planted and condition on the first of October, the natural expectation, other circumstances being equal, would lead to a comparison with last year, as follows: North Carolina, 15 per cent. increase; South Carolina, 9; Georgia, 5; Florida, 9; Alabama, 8; Mississippi, 10; Louisiana, 10; Texas, 30; Arkansas, 15; Tennessee, 1. This would give a crop exceeding three and a half millions of bales. But the indications of the season thus far, reports since October first, and the probabilities of a favorable autumn for maturing and picking the "top crop" do not prognosticate a return of the remarkably favorable experience of the past season. In 1869 the discouragements and drawbacks appeared with the plant in spring, and gradually disappeared, the season culminating in almost unexampled favor, with exemption from destroying frosts, blighting rains, insects, and disease. The present crop, vigorous in early growth, "running to weed" rather than boll, then burned with drought in August, and subsequently flooded with rain in September, has endured vicissitudes unfavorable to continued fruitfulness, as a general shedding of forms and occasional rotting of bolls attest. The boll worm and army worm have been at work in places, and rust is more or less prevalent in all the cotton States. The opening of the later bolls is unusually well advanced in most places, and the last picking promises to be light. These indications, instead of pointing to an increase of a third of a million bales, render it probable that the present crop will be no larger than the last, and if the remainder of the season should be very unpropitious a reduction of a quarter of a million bales might result. Another month or two will determine whether the present crop shall be limited to three millions of bales, or rise to three and a half millions.

As predicted early in the season, the promise of an average crop upon the present area in cultivation has reduced the price to fifteen cents per pound, or to the very verge of profitable cultivation; and correspondents are already reporting the ruin of planters who grow cotton exclusively and buy all agricultural supplies.

Sugar cane.—A large increase in the product of cane sugar is regarded as certain. For several years a considerable part of the crop has been used as "plant cane" for extending the area of cane culture. This extension is beginning to enlarge production materially, and will aid, in connection with the fine condition of the growing plant, to swell the sugar yield of the present year. The average condition of this crop in Louisiana is placed at eleven-tenths, or 10 per cent. above a medium. In Texas the prospect is equally favorable, and generally favorable returns come from the limited sugar area of Mississippi, Alabama, Georgia, and Florida. In Brooks County, Georgia, in Liberty County, Florida, and in Rapides

and West Feliciana Parishes, Louisiana, deterioration of condition from drought is reported. Our correspondent in Iberia Parish, Louisiana, gives an illustration of the progress of cane-growing in that State: "The quantity of cane planted is greatly in excess of last year; new mills are going up all over the parish, and a season of general prosperity is apparently at hand."

Old wheat.—There is a comparatively large surplus of old wheat in Tennessee, Missouri, Iowa, Kansas, and Nebraska, and as much as usual in Ohio, Indiana, and Kentucky, and smaller States. There is no evidence of any large surplus to add materially to the supplies of the year.

Beef cattle.—The supply of fattening cattle is somewhat in excess of former years, with great local variation. In Maine, New Hampshire, and Vermont, it is caused by an apprehended deficiency of hay and other feed, and their condition is relatively low. A good supply is reported in the West, in fair condition. A deficiency is reported in California, Virginia, New Jersey, New York, and the southern half of New England, in somewhat reduced condition except as to Virginia.

Table showing the condition of the crops, &c., on the 1st day of October, 1870.

STATES.	WHEAT.		RYE.		OATS.		BARLEY.		BUCK-WHEAT.	CORN.	POTATOES, (Solanum tuberosum.)
	Product compared with last year.	Average quality compared with last y'r.	Product compared with last year.	Average quality compared with last y'r.	Product compared with last year.	Average quality compared with last y'r.	Product compared with last year.	Average quality compared with last y'r.	Average condition October 1.	Average condition October 1.	Average condition October 1.
Maine	9.5	10.1	9.6	10.1	9.2	9.9	8.9	9.6	9	11	9.3
New Hampshire	9	10	9.1	9.6	9.3	9.4	9.1	9.5	7.5	9.6	7.5
Vermont	9	10.5	9.2	10.4	8.8	9.8	9.2	9.5	7.6	10.5	9
Massachusetts	10.2	10	9.7	9.7	9.2	9.7	9.5	9.7	.....	8.5	7.1
Rhode Island	.....	.....	10.2	10	9.7	10	9.2	11	.....	10.5	8.7
Connecticut	10.1	10.3	10	9.7	8.2	9	.....	.....	6.7	9.7	7.5
New York	7	10	9	10	8.4	9.2	8.9	9.7	8.6	10.3	8.5
New Jersey	7.3	8.5	8.3	9.4	10.1	10	.....	.....	7.8	10.4	7.5
Pennsylvania	8.7	9.3	8.8	9.7	9.4	9.4	9.4	9.8	8.6	10.3	8.9
Delaware	7	8	.....	.....	9	10	.....	.....	9	9	6
Maryland	8.3	8.6	8.6	9.5	10.2	10.6	9.5	9.5	7.8	9.6	8.3
Virginia	9.1	9	9	9	10.5	10.1	.....	.....	9.7	10.3	9.1
North Carolina	10.9	9.8	10	9.9	11	9.9	7.3	9.6	10.2	11.2	10.3
South Carolina	11	9.8	11	10	10.9	9.5	.....	.....	.....	11	9
Georgia	11	9.9	10.4	10.1	10.5	10.5	10	10	.....	11.2	10.3
Florida	.....	.....	.....	.....	10.2	10.6	.....	.....	.....	10.6	.....
Alabama	11.2	11	10	10	10.1	9.8	.....	.....	.....	11	10.2
Mississippi	8.3	10.7	10	10	10.5	12.1	.....	.....	.....	1	9.7
Louisiana	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.3	9.5
Texas	9.8	10.5	9.3	10	9.7	9.4	9	9.5	.....	10.1	10
Arkansas	10.7	10.7	10.4	10.1	12.2	10.7	.....	.....	.....	11.6	10.7
Tennessee	10.9	9	10.3	9.1	11.2	9.7	11	9.2	10.5	12.2	10.8
West Virginia	10.2	10.4	10.1	10.1	11	10.2	11.2	10.2	9.3	11	10.1
Kentucky	10.2	9.8	10.2	10	10.6	10.2	10	10	10	11.5	10.7
Missouri	9	10.5	9.2	10.2	8.5	9.5	9.5	10	10	10.6	8.3
Illinois	9	11.2	9.1	10.6	9	9.7	9	11.5	10.8	11.7	7.6
Indiana	8.2	10.5	9	10.5	9.4	10.2	8.9	10.1	9.5	11.8	6.3
Ohio	8.6	10.4	9.1	10	9.6	10.1	9.2	9.8	9.4	11.6	7.9
Michigan	9.1	10.6	9.6	10	11.3	10.1	9.7	10	9.9	11.6	8.5
Wisconsin	8	10.6	9.2	10.4	7.1	8.7	8.7	10.3	9.9	11.9	6.4
Minnesota	8.5	10.7	9.8	10.2	8.4	9.2	9.5	10.1	10.8	10.2	5.4
Iowa	8.7	11.2	9.6	11.3	8.6	10.2	10.2	11.4	10	10.5	8.3
Kansas	9.8	10.7	9.1	10.4	9	9.8	9.4	9.8	10.4	8.7	8.3
Nebraska	8.7	10.8	9.6	10.2	8.3	9.4	10.8	11.4	10.2	9.1	8.3
California	8.5	9.5	.....	.....	9	9.3	8.4	9.8	9.5	9.1	8.1
Oregon	9.7	9.7	.....	.....	9.2	9.3	9.6	9.8	9.9	9.5	8.5

Table showing the condition of the crops, &c.—Continued.

TATES.	POTATOES, (Batatus edulis,) sweet.	TOBACCO.	BEANS.	PEAS.		SORGHUM.	SUGAR CANE, (not sorghum)	COTTON.	OLD WHEAT.	FATTENING CATTLE.	
	Average condition October 1.	Average condition October 1.	Average condition October 1.	Average compared with last year.	Average condition October 1.	Average condition October 1.	Average condition October 1.	Average condition October 1.	Average am't of old wheat on hand compared with last year.	Average number of fattening cattle comp'd with last year.	Average condition October 1, compared with last year.
Maine			10.3	10	9.9				10	11.1	8.3
New Hampshire			9.5	10	9.7				9.6	10.2	8.5
Vermont			10.2	10.2	10.2				9.6	10	8.6
Massachusetts		9	9.1						10	9.5	9.5
Rhode Island			10.7	10	10					9.2	8.5
Connecticut		9.2	10						9.5	9.2	8.2
New York		10.5	9.8	9.6	9.6				9.5	9.5	9.3
New Jersey	11.7		8.5	9.5	9.5	10			10	9.5	9.5
Pennsylvania	10	10.1	9.9	9.6	9.6	10.2			10.1	9.9	9.8
Delaware	9		10			10			10	10	9
Maryland	9.5	9	9	10.6	9.5	9.5			10.3	10	9.8
Virginia	9.6	12.1	9.3	8.8	8.7	10.3		7.5	7.8	9.6	10.5
North Carolina	10.9	12	10.1	10.9	9.7	10.3		10.7	10.4	10.1	10.5
South Carolina	10.2	11.5	10	8.7	10.3	9.7		10.4	9.7	10.3	10.6
Georgia	11	11	10.3	11.6	11.2	10.6	9.9	9.9	9.7	10.5	11
Florida	9.1			8.5	9.8		10.3	10.2		9.5	10.2
Alabama	10.4	10.6	9	9	10.4	12	10	9.6	10.3	10.3	11.1
Mississippi	10			9.6	9.4	9.1	10	9.9	9.6	10.4	10
Louisiana	9.5			8.4	10.6		11	9.2		10.8	10.4
Texas	10		10	9.8	9.5	9.5	11	10.5		10.2	10.3
Arkansas	10.9	9.8	10.1	9.8	10.1	11		10.5	10.2	11.5	10.5
Tennessee	10.9	11.1	11	10.3	10.2	10.7		9.7	12.3	10.8	11.1
West Virginia	10.1	10.4	10.6	10	10	9.8			9.5	10.6	11
Kentucky	10.5	10.8	10.1	9.6	10	10.7			10.2	10.2	10.9
Missouri	10	10.1	9.5	10.1	10.2	10.3		10.5	12.8	10.8	10.4
Illinois	10.1	10.2	9.8	10	9.5	10.6			8.2	10.3	10.2
Indiana	9.7	10.7	10.4	10.6	10.7	11			11.2	9.9	10
Ohio	9.8	9.5	10.3	9.7	10	11.5			10.5	10	9.9
Michigan		10.2	9.9	10	9.8	10.5			9.7	10.3	10.3
Wisconsin		10.4	10	10.5	10.7	11			9.5	10	10
Minnesota			9.5	10	10	11			7.8	9.9	9.3
Iowa	9.9		8.8	10.1	9.7	10.3			10.5	10.3	10.5
Kansas	10.1		8.7	8.9	8.1	10			11	11.6	10.4
Nebraska	10.1		9.9	9.8	9.8	9.9			10.8	10.7	9.8
California	8.8		9.8	9.5	9.5				8	9.2	8.8
Oregon		10	9.4	9.5	10.3				9.2	9.7	10.4

NOTES ON THE CROPS.

WHEAT.

Oxford County, Me.—Wheat was injured by the drought in many places. Poor quality.

Franklin County, Me.—Wheat below average on account of drought.

Norfolk County, Mass.—Product increased 10 per cent. More will be sown this fall.

Perry County, Pa.—Fifty per cent. below the crop of last year in quantity and quality.

Lancaster County, Pa.—The Tappahannock wheat yielded 20 to 22 bushels to the acre; Mediterranean, 8 to 9 bushels.

Clearfield County, Pa.—A fair crop.

Kent County, Del.—Quality better than expected, as great injury was sustained when in bloom from wet weather.

Baltimore County, Md.—Crop below an average both in quality and quantity; more old wheat on hand than for some years.

St. Mary's County, Md.—Injured by the scab; yield small; quality below an average.

Spottsylvania County, Va.—Wheat crop no better than last year, except the early maturing varieties on high lands.

Clarke County, Va.—Considerable falling off in the product; the midge inflicted greater injury than was supposed; quality inferior to crop of last year.

Prince Edward's County, Va.—The average crop; caught by heavy rain while in bloom, which materially reduced the yield.

Highland County, Va.—Good crop; harvested and thrashed in fine condition.

King George County, Va.—About three-fifths as large a crop as in 1869; quality variable.

Wythe County, Va.—Crop greatly above an average, but a great deal was injured in the stack by wet weather; 50 per cent. more old wheat on hand than last fall.

Washington County, Va.—Better than last year in quality and quantity.

Gaston County, N. C.—Good crop, but quality rather inferior.

Stokes County, N. C.—Crop better than last year; quality inferior; damaged in stack by wet weather.

Yadkin County, N. C.—Did not thrash out as well as the straw indicated; grain not so plump as last year.

Alamance County, N. C.—The crop thrashed out 30 per cent. more than in 1869; quality not so good.

Anson County, N. C.—Crop over an average.

Jackson County, Ga.—Crop good in quality and quantity.

Red River County, Texas.—A better crop than last year.

Dyer County, Tenn.—Better in quality and quantity than the crop of 1869.

Williamson County, Tenn.—All small grains injured in the shock and at the thrashing by rain.

Greene County, Tenn.—Smut largely mixed with the crop. The use of bluestone, which with the writer is always effective, is not sufficiently common.

Sullivan County, Tenn.—Better yield than last year; straw small, but large product of grain.

Humphreys County, Tenn.—Equal to last year in quantity, but inferior in quality.

Monroe County, W. Va.—Quality first rate, and the yield much larger than last year, though there is less straw.

Nicholas County, W. Va.—Yield light, but of good quality; the increased area sown, however, makes a large aggregate product.

Braxton County, W. Va.—Three per cent. more old wheat on hand than there was last year.

Randolph County, W. Va.—A greater acreage than there has been for years.

Henry County, Ky.—Quality never better, but quantity far below our expectation.

Russell County, Ky.—Quantity about the same as last year, but not equal to our expectations.

Boyle County, Ky.—The low price tends to lessen the quantity now being sown.

Jackson County, Ky.—A good crop, carefully harvested.

McCracken County, Ky.—About one-third of the crop thrashed late, and seriously damaged.

Henry County, Mo.—Old wheat remains unsold, on account of low prices.

Mississippi County, Mo.—Quality as good as last year, and an increased production.

Shelby County, Mo.—The yield falls far short of last year, but the quality is excellent.

Cass County, Mo.—The chinch-bugs have nearly destroyed spring wheat.

Franklin County, Mo.—Amount sown to date exceeds that of last year.

Johnson County, Mo.—Early-sown destroyed by the army-worm in some portions of the county.

Pope County, Ill.—The Orange, Mediterranean, and Tappahannock varieties have produced well, but the varieties of May wheat were shriveled.

St. Clair County, Ill.—Damaged much by wevil. The fall crop is being put in in good order.

Clinton County, Ill.—Fall wheat is growing finely.

Macon County, Ill.—A short crop for two years.

Bureau County, Ill.—Very small yield, but good quality. No old wheat on hand.

Edwards County, Ill.—Grasshoppers still numerous enough in some localities to prevent the sowing of wheat. The wheat harvested is plump and good.

De Kalb County, Ill.—Very fine quality, but small yield.

Jennings County, Ind.—But little sown yet on account of dry weather.

Franklin County, Ind.—That sown a month ago as dry as when sown, and not a stalk to be seen for rods, until the 30th September, when rain came.

Cass County, Ind.—The fly has made its appearance in many early sown fields.

Union County, Ind.—So dry that wheat has not sprouted.

Ohio County, Ind.—Much less being sown than usual.

St. Joseph County, Ind.—Most of the early sown is being injured by the Hessian fly. Fully one-half of the wheat was sown late on account of drought, and may escape the fly.

Miami County, Ind.—Not so much per acre as usual, but of better quality.

Madison County, Ind.—Dry weather prevents the sprouting of that now sown.

Randolph County, Ind.—Coming up badly, and perishing for want of rain.

Dubois County, Ind.—Great drought prevents the sowing of wheat.

White County, Ind.—The fall wheat is doing unusually well.

Lucas County, Ohio.—That sown early is not doing well.

Henry County, Ohio.—Not as much sown as usual, the ground being so dry. Prospects for a coming crop are poor.

Williams County, Ohio.—That sown a month ago not up yet.

Erie County, Ohio.—Suffering from drought.

Lake County, Ohio.—Yield very light, and quality poor.

Greene County, Ohio.—Farmers believe it does not pay at $1 per bushel.

Marion County, Ohio.—Fall wheat did not sprout until very recently.

Union County, Ohio.—It is feared much that has been sown will die for want of moisture.

Noble County, Ohio.—Quality good, but a smaller yield than was expected.

Medina County, Ohio.—Farmers hesitate to sow on account of dry weather.

Logan County, Ohio.—Yield and quality fine.

Athens County, Ohio.—Above an average yield, and excellent in quality.

Emmet County, Mich.—Short crop but good quality.

Gratiot County, Mich.—The fall sowing looks well.

Calhoun County, Mich.—About an average crop, of excellent quality.

Cass County, Mich.—In part of the county it fails to come up on account of drought.

Washtenaw County, Mich.—Quality superior to that of last year.

Brown County, Wis.—Twenty per cent. less than expected.

Walworth County, Wis.—Average yield about nine bushels per acre.

Green Lake County, Wis.—The quantity will be about three-fourths of last year's crop, but the quality is excellent.

Columbia County, Wis.—Selling at 87 cents to 92 cents per bushel.

Pierce County, Wis.—About one-third thrashed before the great storms, and was all No. 1. The remainder was greatly injured, some entirely spoiled.

Richland County, Wis.—Damaged to some extent by worms.

Waukesha County, Wis.—Quality excellent. Not much old on hand, but more in the county than usual.

Portage County, Wis.—Winter wheat yielded from twenty to thirty-five bushels per acre, of splendid quality.

Milwaukee County Wis.—A better yield than was expected.

Fond du Lac County, Wis.—The staple crop of this county, and nearly all No. 1, though some was damaged in the stack by rain.

Buffalo County, Wis.—Much was injured by rain.

Watonwan County, Minn.—Not a large yield, but quality excellent.

Freeborn County, Minn.—Old stock of wheat was disposed of immediately after harvest.

Winona County, Minn.—Injured in stack by rains.

Goodhue County, Minn.—Both spring and winter varieties are of fine quality, with a yield better than that of last year.

Ramsey County, Minn.—All was No. 1 in quality, but rains have injured some in the stack.

Wabasha County, Minn.—Wheat in shock much injured by heavy rain, and not more than half the crop will pass inspection, while much will prove worthless.

Hardin County, Iowa.—Extreme drought shortened the crop.

Pocahontas County, Iowa.—The product was lessened by dry weather, but the quality superior.

Sac County, Iowa.—About one-fourth of last year's crop remains on hand.

Marshall County, Iowa.—The yield is less than was expected.

Muscatine County, Iowa.—Not a great yield, but good quality.

Floyd County, Iowa.—Not much old left over.

Montgomery County, Iowa.—Damaged some in stack by rains.

Clinton County, Iowa.—Quality this year No. 1. Very little old left over from last year, and its quality poor.

Linn County, Kans.—Looks well, but is a little late.

Franklin County, Kans.—Late sown, (and most was sown late,) looks well.

Jackson County, Kans.—A first-rate crop.

Morris County, Kans.—An excellent yield.

Coffey County, Kans.—Better yield in quality and quantity than anticipated. There will be an unusually large amount sown this fall.

Butler County, Kans.—Good quality, but yield less than expected.

Saline County, Kans.—Quality better and quantity less than was expected. One-half more old on hand than there was last year.

Leavenworth County, Kans.—Injured in the stack by rains.

Atchison County, Kans.—Injured in the stack by rains, except that which was thrashed early.

Jefferson County, Kans.—Army-worm and chinch-bug eating the early sown.

Gage County, Nebr.—A great amount spoiled in the stack by rains.

Jefferson County, Nebr.—Damaged a little in the stack by rain. Some winter wheat being sown as an experiment, and is looking well.

Cuming County, Nebr.—Lighter than usual, but acreage twice as large as last year.

Esmeralda County, Nev.—The quality is better than for three years past, and a larger production.

Plumas County, Cal.—Reduced quality and quantity on account of rust, but better than was expected before thrashing.

Alameda County, Cal.—Should the season prove favorable there will be a greater breadth sown than in any previous season.

Lake County, Cal.—An excellent crop, all thrashed.

Mendocino County, Cal.—Above an average in quality and quantity.

Marion County, Oreg.—All grains well harvested. Late sown injured by intense and continued heat, and hence the yield of such is light. Early sown fall and spring grain good. Straw heavy, but general yield small to the bulk of straw.

Douglas County, Oreg.—Quite a falling off in quantity from last year, in proportion to amount sown.

Benton County, Oreg.—A lighter crop than was anticipated.

Iron County, Utah.—Tappahannock wheat has done well.

Box Elder County, Utah.—Farmers are preparing to sow fall wheat extensively, as it escapes the grasshoppers.

San Pete County, Utah.—Very little spring wheat saved from the grasshoppers, and, though much land was replanted, the grain is still green, and frosts have already come.

Kane County, Utah.—Injured by grasshoppers. No old on hand.

Conejos County, Colo.—Not more than half the crop harvested. Six inches of snow on the ground.

Clalam County, Wash.—Owing to the very dry summer, spring-sown wheat was hardly worth the harvesting.

CORN.

York County, Me.—Three-fourths of the corn crop has been harvested in the best condition.

Oxford County, Me.—Good crop with few exceptions, and of excellent quality.

Strafford County, N. H.—Good yield, of first quality; much of the crop harvested.

Berkshire County, Mass.—Remarkable yield of good quality.

Norfolk County, Mass.—Some fields of extra quality, others inferior. General yield average, well ripened.

Plymouth County, Mass.—Many fields cut up and fed to the cattle; severe drought.

Washington County, R. I.—Season remarkably favorable for curing corn.

West Chester County, N. Y.—Good crop; not much injured by drought.

Dutchess County, N. Y.—Drought has injured corn on dry lands; crop not above an average.

Tioga County, N. Y.—Corn got such a fine start in June and July that it is up to an average, notwithstanding the drought.

Warren County, N. J.—Corn three weeks earlier than usual; quality good.

Cumberland County, N. J.—Season very dry. In some parts of the county the corn crop is almost entirely cut off, while in others there will be two-thirds to a full crop.

Indiana County, Pa.—Corn is in fine condition; all sound and dry.

Adams County, Pa.—The central portion of this county has suffered much from drought, and the corn crop is unusually short.

Warren County, Pa.—Crop harvested in fine condition.

Dauphin County, Pa.—Almost a failure on some farms, owing to drought.

Chester County, Pa.—Crop shortened by drought.

Luzerne County, Pa.—Drought has reduced the crop.

Clearfield County, Pa.—Superior crop, ripe and sound.

St. Mary's County, Md.—Injured and in some cases destroyed by the drought.

Baltimore County, Md.—Early corn, good; late, injured by drought; crop one-tenth short of an average.

Town Point, Md.—Crop very good, though some complain of rather poor return, blaming the weather, season, &c., when the real causes are lack of manure and insufficient cultivation.

Cecil County, Md.—Early planted corn on dry land is excellent; on wet land it was injured by wet weather early in the season. Late planted injured by drought. Crop above an average.

Washington County, Md.—Crop better than expected. In some parts never better.

Henrico County, Va.—Early corn better than last; late corn utterly worthless, owing to drought.

Northumberland County, Va.—Severely affected by drought. Larger acreage, however, which will make fully two-thirds of an average crop.

Princess Anne County, Va.—Complete failure in some parts of the county, owing to high tides in June, succeeded by drought.

Spottsylvania County, Va.—Full average crop.

Clarke County, Va.—Very good in some portions of the county; in others much injured by the drought.

Norfolk County, Va.—Three-fourths of a crop; drought.

Prince Edward's County, Va.—At least twenty per cent. better than last year.

King George County, Va.—Limited sections have had rains sufficient to make a fair average crop. Very little made in other parts of the county. The general crop about equals the short yield of last year.

Rockbridge County, Va.—Large quantity of corn injured on river bottoms by the freshet, so that stock will not eat it.

Henry County, Va.—A full crop, though many fields have not been well cultivated.

Lincoln County, N. C.—Seventy-five per cent. better than last year.

Gaston County, N. C.—A full crop.

Currituck County, N. C.—In some localities the corn crop is good, in others inferior; the yield will be a fair average.

Carteret County, N. C.—Heaviest crop ever raised in this county.

Duplin County, N. C.—Most planters have raised an abundance of corn.

Anson County, N. C.—A good crop.

Stanley County, N. C.—Crop materially injured by drought on upland.

Caldwell County, N. C.—Considerable rotten corn, owing to wet weather.

Davidson County, N. C.—Crop over an average.

Halifax County, N. C.—An unusually short crop, owing to heavy rains in June and poor cultivation. The acreage is also less than last year.

Abbeville County, S. C.—Two tenths better than last year.

Greenville County, S. C.—Injured by dry weather in July.

Chester County, S. C.—Corn generally good, except in bottom lands.

Lexington County, S. C.—Much better than last year.

Richland County, S. C.—Crop above average, except on the best corn lands, where it falls below.

Clay County, Ga.—Ten per cent. better than last year.

Schley County, Ga.—Plenty of corn for this county.

Jackson County, Ga.—Best crop for many years. Enough in the county to last two years.

Heard County, Ga.—Decidedly better than last year.

Crawford County, Ga.—Favorable late season has increased the crop beyond expectation.

Clayton County, Ga.—Corn injured first by wet weather in June, then by drought in July and August, and also through want of proper culture, owing to the uncertainty of labor.

Baldwin County, Ga.—The corn production will closely approximate the wants for home consumption. That of last year fell far short of it.

Colquitt County, Ga.—Good crop gathered, in good condition.

Franklin County, Ga.—Fifty per cent. better than last year.

White County, Ga.—An unusually fine crop.

Carroll County, Ga.—Crop exceeds any known before.

Mercer County, Ala.—Crop equal to last year.

Morgan County, Ala.—On uplands double the crop of last year. On low lands no better than last year, in consequence of excessive rains.

Greene County, Ala.—Crop being rapidly consumed. Barely possible that enough will be gathered for home consumption.

Dallas County, Ala.—Yield per acre 10 per cent. less than last year, and inferior in quality.

Lauderdale County, Miss.—Crop not so large in yield or acreage as in former years.

Grenada County, Miss.—The crop a fair average, but scarcely enough to supply the county.

Holmes County, Miss.—In the valley sections corn is magnificent, but taking the county over there will hardly be enough for home consumption.

Madison Parish, La.—Yield 50 per cent. above that of last year.

Washington Parish, La.—Crop largely in excess of that of last year in consequence of increased acreage.

Jackson County, Fla.—Average yield, but decreased acreage.

Leon County, Tex.—Corn is turning out better than anticipated.

Red River County, Tex.—Crop inferior to that of last year.

Upshur County, Tex.—Increased product; crops have been better worked than heretofore.

Crawford County, Ark.—The corn crop is above that of last year, which was rather above an average.

Independence County, Ark.—The crop has not been surpassed in quality or quantity in fifteen years.

Dyer County, Tenn.—Superior to any crop for years.

Humphreys County, Tenn.—Best crop for years.

Nicholas County, W. Va.—Crop never better.

Brooke County, W. Va.—Harvested in excellent condition.

Ohio County, Ky.—In fine condition.

Lincoln County, Ky.—Out of danger of frost.

Boyle County, Ky.—Crop will be saved in good condition.

Jefferson County, Ky.—All crops in favorable condition.

Clinton County, Ky.—Never much better.

Shelby County, Ky.—Doing finely and in no danger of early frost.

Jackson County, Ky.—The prospect of a good crop is better than in ten years.

McCracken County, Ky.—A finer crop than any since 1855.

Clay County, Mo.—Standing corn much injured by rain.

Polk County, Mo.—Injured slightly by army worm.

Holt County, Mo.—The unmatured crop is threatened with rot on account of excessive rains.

Texas County, Mo.—The crop is good, but considerably damaged by a worm working in the ear.

Barton County, Mo.—Considerably injured by rain.

Mississippi County, Mo.—The crop is fine.

Shelby County, Mo.—Good quality, fair yield per acre, and acreage larger than common.

Daviess County, Mo.—Is beginning to grow and rot as it stands in the field.

Montgomery County, Mo.—There will be little corn to ship.

Stoddard County, Mo.—All crops a little better than an average.

Linn County, Mo.—The crop is coming out much better than was expected two months ago.

Rock Island County, Ill.—The fall has been favorable for ripening corn.

St. Clair County, Ill.—Excellent and plentiful.

Peoria County, Ill.—Helped by late rains, and ripened perfectly.

Fayette County, Ill.—Splendid crop.

Sangamon County, Ill.—Condition 20 per cent. above average.

Boone County, Ill.—Ripening well, and an average crop.

Macon County, Ill.—Injured by chinch bugs and drought.

Piatt County, Ill.—Injured by chinch bugs to the extent of five bushels to the acre.

Granby County, Ill.—Ripe and sound, but less in quantity than anticipated, on account of drought.

Tazewell County, Ill.—Good quality and fair yield.

Du Page County, Ill.—Cut for fodder to an unwonted extent.

Putnam County, Ill.—Has improved very much within the last month.

Stephenson County, Ill.—An abundant crop.

De Kalb County, Ill.—Never so large an area by one-fourth planted in Illinois, and the crop has attained perfection.

Franklin County, Ind.—Ripe very early.

Posey County, Ind.—Above an average crop.

Marion County, Ind.—Unusually well ripened.

Union County, Ind.—The best crop produced in five years.

Warren County, Ind.—Crop unusually good and forward.

Miami County, Ind.—Never so good a general crop as this year.

Lawrence County, Ind.—An abundant crop, finely matured.

Madison County, Ind.—More than an average crop, maturing finely.

Daviess County, Ind.—The largest crop ever raised in the county, and the best in quality.

Tippecanoe County, Ind.—The best crop ever raised in this county.

Hendricks County, Ind.—Best crop in twenty years.

Noble County, Ind.—We never had better corn.

White County, Ind.—Best crop ever raised in this county.

Hardin County, Ohio.—Good beyond expectation.

Lake County, Ohio.—Looks badly on all lowlands, where the best is usually grown.

Mahoning County, Ohio.—The crop is excellent.

Harrison County, Ohio.—In much dryer condition than usual.

Marion County, Ohio.—Ripened well, and the average better than was expected.

Monroe County, Ohio.—The heaviest crop I ever saw.

Union County, Ohio.—Nearly all cut, and will cure in prime condition.

Auglaize County, Ohio.—As good a crop as ever heretofore.

Noble County, Ohio.—The crop is maturing finely.

Medina County, Ohio.—Crop mostly cut, in splendid condition.

Athens County, Ohio.—Cut short by drought.

Emmet County, Mich.—The best crop ever harvested in this county, and a month earlier than usual.

Calhoun County, Mich.—The finest crop for many years.

Ottawa County, Mich.—A good crop.

Washtenaw County, Mich.—Much better crop than that of last year, on account of soundness.

Green Lake County, Wis.—Crop ripened well.

Green County, Wis.—Unsurpassed in quality and quantity; as large as we have had in many years.

Fond du Lac County, Wis.—The best crop for twenty years.

Dane County, Wis.—An excellent crop.

Outagamie County, Wis.—The best crop ever raised in the county.

Cass County, Minn.—Above an average crop, and all ripe and cared for.

Watonwan County, Minn.—Good crop.

Freeborn County, Minn.—An average crop.

Winona County, Minn.—Ripened perfectly.

Goodhue County, Minn.—Season unusually favorable, and crop perfectly ripe.

Ramsey County, Minn.—More planted than usual, and best crop in many years.

Hardin County, Iowa.—Excellent in quality, but deficient in quantity.

Cherokee County, Iowa.—Few pieces will exceed 10 bushels to the acre.

Mahaska County, Iowa.—Maturing finely.

Dallas County, Iowa.—Molding slightly in the field on account of wet weather.

Washington County, Iowa.—Early planted not half a crop.

Jackson County, Iowa.—More than an average yield of first quality.

Marion County, Iowa.—Much injured by wet weather.

Marshall County, Iowa.—Ripening well, but a large portion of the ears never filled.

Muscatine County, Iowa.—Not more than four-fifths of an average crop.

Jasper County, Iowa.—Well matured, sound, and good.

Des Moines County, Iowa.—The crop is light.

Floyd County, Iowa.—An average crop per acre, and about two-tenths increase of acreage.

Appanoose County, Iowa.—Nearly double the crop of last year.

Decatur County, Iowa.—An immense crop; twice as large as any previous crop in this county.

Jackson County, Kans.—Much better than was anticipated after the injury in July and August from drought.

Butler County, Kans.—A fair crop in the south and a light one in the north part of our county.

Saline County, Kans.—Injured by summer drought.

Leavenworth County, Kans.—Improved by late rains.

Atchison County, Kans.—Injured by drought, and smutty.

Jefferson County, Kans.—Damaged in the shock by wet weather.

Shawnee County, Kans.—Improved by late rains.

Republic County, Kans.—Very poor, on account of drought.

Gage County, Nebr.—Nearly a full crop.

Nemaha County, Nebr.—Injured somewhat by rains.

Cass County, Nebr.—Badly injured by rains.

Jefferson County, Nebr.—Damaged a little by rain.

Douglas County, Oreg.—Corn that was well put and well cultivated is fully up to an average, but much of it was poorly put in, and not well cultivated.

Lane County, Oreg.—A full average crop.

Esmeralda County, Nev.—Largest crop for the past three years. Quality superior.

Box Elder County, Utah.—Very good crop.

Gallatin County, Mont.—Heavy frosts in August materially injured nearly all cereal crops in some of the valleys, particularly the Gallatin

COTTON.

Hertford County, N. C.—Cotton-picking just begun; a few bales sent to market. Farmers say that, with all the fine growth, they will not make more than an average crop. Bolls small; many faulty or rotten. A few farmers last year made a bale to the acre with a much smaller growth of wood. One farmer will gather 1,500 pounds seed cotton per acre from 50 acres, if the crop is not injured by early frost. Our correspondent says that, with the annual improvement in implements and culture, he is satisfied that 2,000 pounds will soon be produced on the best farms.

Chowan County, N. C.—The late cool weather has given cotton the rust, and nearly ruined late crops. Of early crop, loss at least one-third.

Pasquotank County, N. C.—If frost should keep off until November 1, considerably above an average crop will be raised.

Perquimans County, N. C.—Cotton being injured by rust, particularly where guano and other purchased fertilizers were used.

Gaston County, N. C.—Cotton good; opening well; appearances generally favorable.

Lincoln County, N. C.—A crop of 20 per cent. over that of last year promised.

Montgomery County, N. C.—Owing to excessive drought, many of the late blooms and forms have fallen, and much cotton has opened before maturity.

Sampson County, N. C.—Stalk much taller than ever before, but not bolled in proportion. Crop will be excellent.

Jones County, N. C.—The growth is much better than last year, but not so well bolled; neither is the crop so early by three weeks, and in the event of early frost the yield will be less than last year.

Stanley County, N. C.—Cotton opened early, is free from injurious insects, and is yielding a fine staple.

Anson County, N. C.—Owing to the rust, the crop will not be much greater than last year.

Green County, N. C.—Crop injured by drought and rust. Six-tenths of a crop. Young bolls falling.

Duplin County, N. C.—Not more than two-thirds of last year's yield to the acre. August rains caused shedding of bolls. Rust almost universal. The fertilizers used have not generally paid. This, combined with low price of cotton, makes a gloomy prospect for the planter. Many will not clear expenses; and where one has devoted himself entirely, or nearly so, to cotton, he is ruined.

Martin County, N. C.—The prospect for cotton has very much changed since the September report, owing to the hot weather and heavy rains. Although the acreage is much larger than last year, the present indications are that the product will be less.

Mecklenburg County, N. C.—About the same acreage as last year. Will not yield as well in some portions of the county.

Carteret County, N. C.—A heavy crop expected, but a portion will be lost, as the heavy rains prevent picking.

Halifax County, N. C.—Crop injured by wet weather. Yield, one-fourth less per acre than last year, but the increased acreage will make the aggregate product an average.

York County, S. C.—Crop considerably injured by the drought in August.

Chester County, S. C.—Cotton greatly injured by drought.

Lexington County, S. C.—A falling off in cotton since September report.

Orangeburg County, S. C.—Cotton failed considerably in August and has not recovered.

Richland County, S. C.—Injured by hot weather in September and now suffering from excessive rains.

Spartansburg County, S. C.—All the later blooms and many small bolls dried up. There will be no late cotton. Crop much less than expected a month ago.

Newberry County, S. C.—Cut short by fall drought. Twenty per cent. less yield than last year.

Abbeville County, S. C.—Cotton has fallen off, but still promises to equal the crop of last year.

Union County, S. C.—Will not yield as well as expected. In some sections no late crop. Crop earlier than usual.

Glynn County, Ga.—The rust has appeared in many cotton fields, doing much injury. The plant is small and poor; no worms.

Macon County, Ga.—Late favorable weather has improved the prospect.

Bartow County, Ga.—The yield will not be as heavy as anticipated two months since. The wet weather has caused shedding.

Troup County, Ga.—The August crop nearly all fell off, from the effects of the drought. Quality good, but the yield will be much less than anticipated.

Richmond County, Ga.—Cotton has not been so far advanced for many years. It is believed the crop may nearly all be gathered this month.

Columbia County, Ga.—Owing to the free use of fertilizers cotton is nearly all open, and the season being propitious for picking, the work is more than half done. The entire crop will be picked by the 1st of November.

Clayton County, Ga.—Reduced crop notwithstanding increased acreage, owing to summer drought. Perhaps twenty per cent. below the crop of last year.

Morgan County, Ga.—Crop considerably less than estimates made earlier in the season, owing to severe drought in August; scarcely any "middle crop." Cotton on fertilized lands much earlier than on lands not thus treated. The former is nearly all open on the stalks or picked out, while the latter has hardly commenced to open.

Forsyth County, Ga.—Plant very fine, but in danger of injury from continued rains.

Butts County, Ga.—Not as promising as at last report; season unfavorable in most of the county.

Chattooga County, Ga.—Cotton running too much to wood and may not open so well.

Cherokee County, Ga.—September rains may seriously affect the cotton crop in this county.

Crawford County, Ga.—Much injured by rust.

Milton County, Ga.—Not so promising as on September 1, but with the increased acreage the crop will be equal to, if not larger than, last year's.

Heard County, Ga.—Injured by heat of August. No late crop.

Jackson County, Ga.—Crop falling far short of anticipations. Hot weather in August reduced the yield nearly one-half.

Clay County, Ga.—Crop better than last year.

Hancock County, Ga.—Crop not turning out as well as expected. A good open fall may bring it up to an average.

Schley County, Ga.—Short cotton crop.

Baldwin County, Ga.—Greater portion of the crop housed. The staple is longer and better than that of last year.

Colquitt County, Ga.—Cotton manured with guano is affected with something like rust and has shed the leaves. It is feared that guano will not prove to be the fertilizer expected.

Franklin County, Ga.—Perhaps twenty per cent. better than in 1869.

Carroll County, Ga.—The crop has been greatly damaged by extreme drought and by wet weather, causing the late crop to shed off almost entirely. Many farmers have gathered nearly their whole crop. Some will not make half a crop, owing to the drought and the use of fertilizers.

Tallapoosa County, Ala.—Through the middle portion of the county

the crop is good; in the northern and southern portions inferior, owing to the drought. More rust than for several years. The crop will be gathered early.

Calhoun County, Ala.—The past month has been unfavorable for cotton. Farmers not so sanguine of a large crop as they were in August.

Hale County, Ala.—Crop opening rapidly. Season thus far unusually good for picking.

Mercer County, Ala.—Crop seriously injured by rust. Not more than a half crop.

Clarke County, Ala.—September has been favorable for gathering cotton. Lands fertilized with commercial manures have matured the crop much earlier than those upon which none has been used. The crops on the former are more than half gathered. The boll-worm and rot have done much injury. Caterpillars are now stripping off the leaves and will do some injury.

Sumter County, Ala.—Seriously injured by continued rains.

Dallas County, Ala.—By the extremes of dry weather in July and wet in the latter part of August the cotton crop has suffered materially. The yield per acre will fall twenty to twenty-five per cent. below that of last year.

Greene County, Ala.—Crop cut short by rust and imperfect culture. Nearly all open.

Randolph County, Ala.—Some complaint of rust. No worms. Picking briskly. Turning out well generally.

Marengo County, Ala.—Estimate slightly raised in this county since last report. While much of the canebrake land and the wet bottoms show considerable falling off from last year, the reduction is made up by increased yield from the sandy lands and uplands.

Marshall County, Ala.—Not much better than last year.

Grenada County, Miss.—The crop is opening unusually fast. Picking progressing slowly, and unless the weather continues fine a great deal will be lost. The yield can hardly be an average one, as the middle and top crops are very short. The crop is two-thirds open.

Leake County, Miss.—Cotton has suffered in some localities from boll-worms, and in others from excessive rains. The yield promises to be less than last year, according to acreage.

La Fayette County, Miss.—Crop better than last year. Season very fine for gathering thus far.

Jefferson County, Miss.—Failed materially since September 1; cause, heavy rains. Few army-worms.

Sunflower County, Miss.—The best season for many years for making cotton. Every man of any industry has a good crop; still, there are poor crops, because the laborers are lazy.

Newton County, Miss.—The late drought reduced the crop to about the same as last year.

Claiborne County, Miss.—Cotton has fully opened. Pickings as good as ever known.

Holmes County, Miss.—Opening finely, but the yield will hardly prove an average, owing to the boll-worms and the showery weather of August and September.

Pike County, Miss.—Opening fast, and if the labor can be obtained the crop will be in early. In some localities the freedmen, finding that their crops will not more than pay their expenses, are quitting the fields.

Rankin County, Miss.—Crop somewhat injured by rust and by a heavy storm of wind, rain, and hail; but favorable dry weather will enable most of the plants beaten down to mature their bolls.

Wilkinson County, Miss.—On hill lands the crop has been much injured by the hot, dry weather. Bottom land crops not so much damaged. On hill lands one-half the crop gathered. On a large proportion there will be no late picking.

West Feliciana Parish, La.—Owing to the excessive rains and hot weather in August the cotton shed its forms badly. The weather in September has been very dry, causing the bolls to open very rapidly, and checking the growth of the late planting.

Madison Parish, La.—Prospect good. If the season proves as good as the last for picking the yield will be at least 25 per cent. better than last year.

East Feliciana Parish, La.—A great falling off in the crop, owing to excessive rains in some localities and drought in others. Less top crop than for years. Fields red with rust. Bolls opening rapidly.

Tangipahoa Parish, La.—Weather favorable, but there will be a very light top crop on account of late drought.

Rapides Parish, La.—The worms had stripped the cotton plant by the 15th ultimo. The middle crop dropped off in consequence of the rains in the early part of August. Owing to scarcity of labor it is feared that much of the crop now open will be lost.

Iberia Parish, La.—The season for cotton never excelled. Opening as rapidly as can be gathered. The product will be at least 40 per cent. above that of last year.

Avoyelles Parish, La.—Owing to injury by caterpillars and late continuous rains, there will not be much over half a crop of cotton in this parish.

Morehouse Parish, La.—Greatly injured by August rains, and will be reduced one-third thereby. Fully two-thirds of the crop now open.

Washington Parish, La.—Yield per acre not likely to be greater than last year, but the acreage is largely increased.

Union Parish, La.—Crop reduced one-fourth to one-third from the amount promised August 1.

Tensas Parish, La.—The caterpillar and "dry rot" have cut down the crop considerably, but still there is as much as can be gathered by the available force.

Lamar County, Tex.—Continued rains have reduced the prospect for a heavy yield. The lint is of fair quality. Crop maturing early.

Leon County, Tex.—The worm is doing considerable damage in some portions of the county, and it is feared there will be a reduced crop.

Kendall County, Tex.—Cotton will average a bale to the acre in this county.

Smith County, Tex.—The past month has been favorable for cotton. Worms not in sufficient numbers to shorten the crop. The luxuriant growth of the wood has deceived many in estimating the product. The number of bolls is about an average, while the plant is more than double the usual size. Topping the plant has well repaid the labor—not topping alone, but shortening all redundant growth, causing the growth of fruit limbs instead.

Williamson County, Tex.—Promising, with few exceptions. Quality above an average.

Rusk County, Tex.—An average crop will be gathered.

Upshur County, Tex.—About the same as last year. Not as good as expected; injured by boll worm.

Milam County, Tex.—Heavy crop; more than can be gathered. Labor scarce. Crop will average 300 pounds lint cotton to the acre.

Grayson County, Tex.—Crop late, and will be short unless the fall should be late.

Red River County, Tex.—Owing to the rains of August and the boll worms, there will be only about half a crop.

Galveston County, Tex.—The caterpillar appeared September 1 in destructive numbers. About half a crop of cotton will be made.

Fannin County, Tex.—Pickers are gathering 100 to 200 pounds per day for good hands.

Anderson County, Tex.—Although the crop is above that of last year there is a material diminution in the quantity of cotton picked up to date; perhaps 25 per cent.

Ellis County, Tex.—Crop fully up to expectations.

Jackson County, Fla.—The acreage in cotton is greater than last year, and fertilizers have been more liberally used. The use of guano has not answered expectations. It hastens the maturity of the plant, however, and to some extent relieves it from the depredations of the caterpillar. Four-tenths of the crop have been picked.

Liberty County, Fla.—Rust injured cotton 3 per cent.

Leon County, Fla.—Dry September favorable for cotton.

Putnam County, Fla.—A good average crop. No worms.

Levy County, Fla.—Better than usual. The army-worm not so troublesome as in former years.

Sebastian County, Ark.—Cotton was never better in this county. The yield will be large. The bottom crop is well opened, and wet weather does not often injure the middle or top crop.

Crawford County, Ark.—Rather too much rain for cotton on the heavy, rich river bottoms, the young bolls rotting to considerable extent, though the general crop is above an average.

Pulaski County, Ark.—Condition 10 per cent. below an average.

Union County, Ark.—The wet weather in August has caused the small bolls to fall off, thus materially reducing former estimates for this county.

Independence County, Ark.—The crop, in quantity and quality, not surpassed within fifteen years.

Giles County, Tenn.—Cotton is too rank. The crop depends on the length of the season.

McNairy County, Tenn.—The fall has been favorable to cotton thus far.

Dyer County, Tenn.—Crop promising a good yield.

McCracken County, Ky.—The small acreage looks particularly fine.

Kane County, Utah.—Crop injured by grasshoppers.

RYE, OATS, AND BARLEY.

Oxford County, Me.—Oats in many places have felt the effects of the drought, being pinched and of poor quality.

Franklin County, Me.—Rye and oats below an average, owing to the drought.

Waldo County, Me.—Grain crops suffered severely for want of rain.

Norfolk County, Mass.—Rye, oats, and barley up to a good average in quantity and quality.

Clearfield County, Pa.—Fair crops of oats and grass.

Clarke County, Va.—Oats not up to the promise. Grasshoppers cut off the heads both before and after maturity.

Prince William County, Va.—Crops of all kinds, except oats, fall much short of previous estimates, especially late crops, owing to the drought.

Wythe County, Va.—Rye injured in the stack. Oats light in weight, owing to late seeding.

Washington County, Va.—Increased oat crop, but quality inferior.

Anson County, N. C.—Good crop of oats.

Caldwell County, N. C.—Quality of oats much injured by wet weather in harvesting.

Jackson County, Ga.—A good yield of oats.

Monroe County, W. Va.—Heavy falling off in oats both in quality and quantity.

Russell County, Ky.—Oats have not turned out as well as we expected. About 20 per cent. more than last year.

Mississippi County, Mo.—Oats a good crop.

Cass County, Mo.—Barley almost destroyed by chintz bugs. Oats damaged to some extent.

Pope County, Ill.—More than the usual quantity, but not so heavy.

Boone County, Ill.—Oats almost an entire failure.

Bureau County, Ill.—A small yield of oats; quality good.

De Kalb County, Ill.—Less than half a crop of barley.

Lake County, Ohio.—A poor yield compared with that of 1869. Barley also yields less, but is secured in better condition.

Emmet County, Mich.—Oats considerably better than in former years.

Calhoun County, Mich.—Oats and barley extra crops.

Washtenaw County, Mich.—Oat crop superior to last year.

Green Lake County, Wis.—A light crop of oats.

Waukeshaw County, Wis.—Oats in every respect a poor crop.

Portage County, Wis.—Oats ruined by drought.

Blue Earth County, Minn.—Oats injured by a hail storm.

Watonwan County, Minn.—Oats, small yield and poor quality.

Freeborn County, Minn.—A light crop of oats.

Goodhue County, Minn.—Oats suffered from drought, but the quality is good.

Hardin County, Iowa.—Oat crop shortened by drought.

Muscatine County, Iowa.—Barley has done ordinarily well, and the quality is excellent. Oats are poor and light.

Montgomery County, Iowa.—Oats damaged a little in stack by rains.

Clinton County, Iowa.—Oats light, owing to drought.

Esmeralda County, Nev.—Barley and oats superior to any crop for the last three years.

Douglass County, Oreg.—A great falling off in oats and barley in proportion to last year, and quality not so good.

Clallam County, Wash.—Oats and barley crops reduced by the dry summer.

BUCKWHEAT, SORGHUM, ETC.

Norfolk County, Mass.—Very good crop of beans. Turnips may yet be much improved.

Berkshire County, Mass.—Less buckwheat than usual sown; straw heavy, but heads poorly filled.

Essex County, Mass.—Onion crop reduced by the drought; squashes lighter than for years; garden seeds have perfected well, except on very dry lands.

Suffolk County, N. Y.—Buckwheat, beans, peas, indeed all crops except tobacco, sorghum, and sweet potatoes, injured by the dry, hot weather. A small worm is injuring the cabbage very much.

Tioga County, N. Y.—Buckwheat injured by the drought.

Columbia County, N. Y.—Buckwheat injured by drought.

Warren County, N. J.—Buckwheat well set, but very light grain. Crop very short.

Hudson County, N. J.—The drought has injured peas and beans.

Cumberland County, Pa.—Short crops of grain and of inferior quality.

Bedford County, Pa.—The drought has cut short the buckwheat, hastened the maturity of corn, and almost destroyed the fall feed. Many have begun to fodder cattle. On the whole the season has been a prosperous one.

Perry County, Pa.—Turnip crop a failure; destroyed by dry weather and the grasshoppers. Pumpkins also a failure.

Columbia County, Pa.—Buckwheat injured by drought.

Luzerne County, Pa.—The dry weather has shortened the buckwheat crop.

Clearfield County, Pa.—Buckwheat sun-killed.

Indiana County, Pa.—About four-fifths of the buckwheat was caught in the rain after being cut, and is much damaged, unfit for family use. It may answer for feed. One-fifth harvested in good order.

Baltimore County, Md.—Buckwheat blighted by drought and heat.

Alexandria County, Va.—About half a crop of buckwheat.

Montgomery County, N. C.—Owing to excessive drought the sorghum and the pea crop have been cut short.

Anson County, N. C.—The pea-nut crop cut off by the September drought.

New Hanover County, N. C.—Pea-nuts grown extensively; crop above average in quality, but below in quantity.

Stanly County, N. C.—Good yield of superior sirup from sorghum, the dry weather tending to concentrate the juice.

Richland County, S. C.—A good crop of peas.

Union County, S. C.—More attention is being paid to sorghum than for several years past.

Chattooga County, Ga.—Sorghum excellent, except that which is termed the black seed, which is ruined by rust.

Etowah County, Ala.—Decreased acreage in peas, owing to scarcity of seed in the spring, but quality good.

Carroll County, Ga.—Peas better than for years.

Greene County, Tenn.—Sorghum promised well until nearly matured, when, owing to wet weather, it fell to considerable extent, and a black rust rotted the blades and seeds. The quality of the juice is poor and the sirup inferior.

Perry County, Tenn.—Pea-nuts better than anticipated, but rain interferes with digging. First crop of broom-corn this year.

Humphreys County, Tenn.—Pea-nut crop short in acreage, but promising.

Mississippi County, Mo.—An increasing production of sorghum.

Boone County, Ill.—Sorghum excellent, though not a great production.

Grundy County, Ill.—About half the buckwheat sown came up and looks extremely well.

Bureau County, Ill.—Buckwheat looks uncommonly well.

Ohio County, Ind.—A short crop of buckwheat.

Warren County, Ind.—A small crop of buckwheat.

Washtenaw County, Mich.—Buckwheat unusually good as to quantity and quality.

Monroe County, Iowa.—Sorghum is in excellent condition, but very little is raised.

Marion County, Iowa.—Buckwheat still in blossom. Will be a heavy yield if the crop ripens well.

Muscatine County, Iowa.—Buckwheat in blossom. An average acreage and good stand.

Coffee County, Kansas.—Buckwheat promises a fine crop.

Woodson County, Kansas.—The acreage of buckwheat is double that of any former year.

Box Elder County, Utah.—Sorghum promises to be very fine.

POTATOES.

Piscataquis County, Me.—Potatoes about an average crop.

York County, Me.—Three-fourths of the crop has been housed in the best condition.

Oxford County, Me.—Nearly worthless in western part of the county, while in the eastern portion and in the intervales of the Androscoggin the crop is good and of fine quality.

Sagadahoc County, Me.—Crop injured by drought.

Franklin County, Me.—Excellent in quality.

Strafford County, N. H.—Crop seriously affected by the drought. Product light, but quality never better.

Belknap County, N. H.—Crop generally light.

Berkshire County, Mass.—Though a failure in many sections, potatoes have done well here, considering the season. Quality excellent.

Norfolk County, Mass.—Early crop fair. The late crop not more than one-fourth an average yield.

Essex County, Mass.—Crop reduced by drought.

Plymouth County, Mass.—Many fields not worth digging.

West Chester County N. Y.—Dry weather has injured late potatoes.

Columbia County, N. Y.—Suffered from drought.

Warren County, N. Y.—The rains in September and the delay of frosts have made potatoes better than expected.

Hudson County, N. J.—Injured by drought.

Cumberland County, N. J.—Round potatoes very poor. The crop of sweet potatoes unprecedentedly large, some farmers having dug single hills yielding 10, 12, and 14 pounds.

Cumberland County, Pa.—About half a crop.

Perry County, Pa.—Almost a failure, owing to drought. Sweet potatoes have done better.

Columbia County, Pa.—Severely injured by drought.

Warren County, Pa.—Large crop; no rot.

Lancaster County, Pa.—About one-fourth usual crop.

Adams County, Pa.—Unusually short crop; drought.

Wyoming County, Pa.—Hardly half a crop.

Chester County, Pa.—Crop reduced by drought.

Luzerne County, Pa.—Short crop; drought.

Clearfield County, Pa.—Full crop of good quality.

Northumberland County, Pa.—An unusually small crop owing to long dry summer.

Elk County, Pa.—The best crop for many years.

Kent County, Del.—The dry weather has cut short the late potato crop, nearly, if not quite, one-half.

Baltimore County, Md.—The striped potato bug destructive in many localities. Grasshoppers also numerous.

St. Mary's County, Md.—Late potatoes and turnips seriously injured by drought.

Henrico County, Va.—Early potatoes very good crop. Few late ones.
Alexandria County, Va.—Half a crop, owing to drought.
Northumberland County, Va.—Late crop nearly ruined by drought. Sweet potatoes short crop. Turnips a total failure.
Spottsylvania County, Va.—Potatoes a failure.
Lincoln County, N. C.—In a single instance in this county 16½ pounds of the Early Goodrich potato yielded 21 bushels.
Currituck County, N. C.—Sweet potatoes considerably over an average crop.
Stanly County, N. C.—Root crops scarcely half an average.
Georgetown County, S. C.—Sweet potatoes a failure.
Brooks County, Ga.—Potatoes and peas much injured by the drought.
Dooly County, Ga.—Sweet potatoes very promising.
Jackson County, Fla.—Sweet potatoes less promising than last year; decreased acreage.
Liberty County, Fla.—Potato crop reduced one-half by drought.
Dyer County, Tenn.—Crop better than for many years.
Braxton County, W. Va.—Generally very good.
Brooke County, W. Va.—A very poor crop.
Linn County, Mo.—The crop is coming out much beyond our anticipations.
Mississippi County, Mo.—Fully up to our high mark.
Shelby County, Mo.—A fair crop.
St. Louis County, Mo.—Late ones almost destroyed by potato bugs.
La Salle County, Ill.—Very much damaged by potato bugs.
Rock Island County, Ill.—Condition favorable.
McDonough County, Ill.—Late planted doing finely.
Marion County, Ill.—Injured by summer drought.
Fayette County, Ill.—A fair crop.
Boone County, Ill.—In some parts not enough for seed.
Macon County, Ill.—Except early ones, nearly a failure.
Du Page County, Ill.—Very early potatoes did moderately well; late ones are nearly a failure.
Bureau County, Ill.—Will be a fair yield, but not of the best quality.
Putnam County, Ill.—Will not be much more than half an average crop.
Lake County, Ill.—Nearly destroyed by potato bugs.
Carroll County, Ind.—The crop is almost an entire failure.
Posey County, Ind.—Late potatoes very scarce.
White County, Ind.—Suffered severely from bugs and drought.
Ohio County, Ind.—A short crop.
Miami County, Ind.—Bugs have destroyed the vines, and are now working on the tubers.
Tippecanoe County, Ind.—Nearly a failure, on account of bugs.
Noble County, Ind.—Much injured by bugs.
Martin County, Ind.—Sweet potatoes unusually productive; others very much injured by bugs.
Henry County, Ohio.—Very light crop.
Athens County, Ohio.—Cut short by drought.
Hardin County, Ohio.—Not a large yield, on account of drought, but quality good.
Lake County, Ohio.—Not more than one-fourth of an average yield.
Union County, Ohio.—Scarce, owing to the dry season.
Auglaize County, Ohio.—Greatly injured by bugs.
Noble County, Ohio.—Not so good a crop as last year.
Medina County, Ohio.—A medium crop of excellent quality.

Logan County, Ohio.—About four-fifths ot an average crop.
Emmet County, Mich.—Excellent, and a heavy crop.
Bay County, Mich.—Being injured by bugs.
Calhoun County, Mich.—Three-tenths destroyed by bugs.
Van Buren County, Mich.—Injured by drought.
Ottawa County, Mich.—A sound, average crop.
Washtenaw County, Mich.—Much injured by bugs.
Walworth County, Wis.—Nearly a failure.
Green County, Wis.—Nearly ruined by bugs.
Waukesha County, Wis.—Mostly destroyed by potato bugs.
Cass County, Minn.—An excellent crop.
Blue Earth County, Minn.—Nearly ruined by drought and bugs.
Freeborn County, Minn.—Badly injured by bugs.
Winona County, Minn.—Much injured by bugs and drought.
Goodhue County, Minn.—Injured more than ever by bugs.
Monongalia County, Minn.—The potato bug has nearly destroyed the crop.
Ramsey County, Minn.—Mostly eaten by the bugs. Not one-fourth of an ordinary crop.
Hardin County, Iowa.—Potato crop shortened by drought.
Hancock County, Iowa.—Much better than was expected.
Washington County, Iowa.—Late planted are very fine.
Jackson County, Iowa.—Early varieties meager. Others, especially the peach blow, yield finely.
Marion County, Iowa.—Now in blossom and thrifty as in July.
Muscatine County, Iowa.—There will be a larger crop than that of last year if frost holds off.
Floyd County, Iowa.—Inferior in size, and not over three-tenths of the usual quantity.
Washington County, Kans.—There will be a medium crop.
Jackson County, Kans.—Will be a good crop if rot does not set in after so much rain.
Coffey County, Kans.—Late ones promise a fine crop.
Saline County, Kans.—Very much injured by drought.
Jefferson County, Kans.—Late ones growing finely.
Esmeralda County, Nev.—Potatoes better than for three years.
Lincoln County, Nev.—An entire failure.
Douglas County, Oreg.—Not more than half the usual crop.
Clallam County, Wash.—Crop reduced by dry weather.

TOBACCO.

Lancaster County, Pa.—Heavy crop; prime lots selling to New York agents at 20 cents per pound.
Madison County, Va.—The tobacco crop is unusually heavy—harvested early.
Prince Edwards County, Va.—Crop forward and mostly housed.
Henry County, Va.—Crop mostly cut and cured. Best crop in many years, both in quality and quantity.
Lincoln County, N. C.—The crop promises to be 15 to 20 per cent. better than last year.
Forsyth County, N. C.—Tobacco very fine.
Alamance County, N. C.—Crop fine in quality and quantity; 50 per cent. more than last year in the county.
Franklin County, Ky.—Ripened well.
McCracken County, Ky.—Worms have been very injurious.

Monroe County, Ohio.—Cured in better condition than usual.

Noble County, Ohio.—Being housed in fine condition; and quality better than last year.

Robertson County, Tenn.—Crop in the barn in fine condition; large leaf and good color.

Monroe County, W. Va.—Finest crop ever grown in the county. The ripening season being warm and dry, with heavy fogs, caused the leaves to thicken up and accumulate a large amount of gum. Product all housed and 25 per cent. in excess of any crop since the war.

RICE.

Glynn County, Ga.—The rice crop is good, average crop. The harvest, which is now nearly finished, has been favorable, and a prime article will be sent to market. The acreage is less than last year, but the crop has been better attended. Negro labor is becoming more settled and planters can form a very just opinion as to the amount of work they can get done during the season.

Plaquemines County, La.—The dry weather of September has been most propitious for the rice harvest, which is progressing rapidly to a close. The yield is not a full one, but the crop is being saved in prime condition.

PASTURES, ETC.

Cumberland County, Me.—Hay and pastures are short, and the number of horses, cattle, and sheep will have to be reduced, to conform to the supply of feed.

Oxford County, Me.—Fields entirely destitute of grass; farmers feeding from the winter store, which is one-third short.

Sagadahock County, Me.—Feeding stock generally; drought continues.

Waldo County, Me.—Pastures have suffered severely from drought.

Stafford County, N. H.—The drought has dried up the fields and pastures; in some localities cattle are fed from the barn.

Hillsborough County, N. H.—Cattle being fed from the barn. Hay higher than ever before at this season.

Washington County, Vt.—Feed very short, owing to the continued drought.

Orange County, Vt.—Fall feed unusually short, and much hay will be fed before the usual time.

Plymouth County, Mass.—Pastures so dried up that cattle have to be fed at the barn.

Worcester County, Mass.—Very dry; feed scarce in pastures; feeding from barns commenced.

Westchester County, N. Y.—Dry weather has dried up the pastures.

Ulster County, N. Y.—Pastures and streams dried up.

Columbia County, N. Y.—Pastures short.

Warren County, N. Y.—Pasture meadows very brown. Many cattle will be sold for want of food.

Alleghany County, N. Y.—Feed in the fields very good; ground has not been very dry this year.

Hudson County, N. J.—Pastures injured by drought.

Essex County, N. J.—Pastures pretty much dried up.

Mercer County, N. J.—Pastures much injured by drought.

Huntingdon County, Pa.—Fall pastures very poor on account of the drought.

Wyoming County, Pa.—Meadows badly burned, and scarcely any new seeding in the county; stock foddered since 1st of August.

Lawrence County, Pa.—Pastures unusually good, and old stock in good condition.

Town Point, Md.—Much pasture injured by drought, which it is feared will be felt next year in diminished hay crop.

Smith County, Tenn.—Fall pastures much better than usual, owing to seasonable rains.

Franklin County, Ky.—Grass continues good, though rain is needed.

Henry County, Mo.—Pastures excellent.

Harrison County, Mo.—Fall pastures very fine.

Polk County, Mo.—Injured by army worm.

Callaway County, Mo.—Fine pastures and no frost.

Putnam County, Mo.—Fine, and no prospect of frost.

Osage County, Mo.—Destroyed by the army worm.

Clarke County, Mo.—The finest in ten years.

Franklin County, Mo.—Injured by drought.

Wayne County, Ill.—Being revived by rains.

La Salle County, Ill.—Feed is short.

Rock Island County, Ill.—As green as in May.

McDonough County, Ill.—Luxuriant as in spring.

Lee County, Ill.—Fresh and abundant.

Bureau County, Ill—Feed is excellent.

Stephenson County, Ill.—Fall feed excellent.

Jennings County, Ind.—Very little fall feed.

Boone County, Ind.—Fresh and tender as in spring.

Union County, Ind.—Failed from drought.

Lawrence County, Ind.—Injured by drought.

Madison County, Ind.—Feed short, on account of drought

Randolph County, Ind.—No fall pasture.

Hendricks County, Ind.—Dry weather and short pasture.

Champaign County, Ohio.—Entirely dried up.

Harrison County, Ohio.—Nearly dried up.

Auglaize County, Ohio.—Pastures dried up.

Mercer County, Ohio.—Injured by drought.

Vinton County, Ohio.—Pastures dried up, and cattle in poor condition.

Crawford County, Ohio.—Fall pastures light.

Van Buren County, Mich.—Shortened by drought.

Ontonagon County, Wis.—Feed never better.

Dane County, Wis.—Bright and good.

Green County, Wis.—Fall feed never better.

Clinton County, Iowa.—Pastures good.

Marion County, Iowa.—Very fine for the season.

Muscatine County, Iowa.—Pastures revived, and cattle doing well.

Jasper County, Iowa.—As green as in June.

Des Moines County, Iowa.—Never better.

Mendocino County, Cal.—Excellent and abundant.

Marion County, Oreg.—Pastures poor, no rains yet to start the fall grass.

EXTRACTS FROM CORRESPONDENCE.

TRIALS OF DEPARTMENT SEEDS.

Genesee County, N. Y.—I had three acres of the Tappahannock wheat on "Tonawanda flats," (bottom land,) which yielded 26 bushels to the acre. It was earlier, and produced better than any other variety in the neighborhood. It does best in rich, strong land.

Sullivan County, Tenn.—The gallon of Tappahannock wheat sent me from the Department last fall yielded 18 gallons of superior grain. Wherever sown it has excelled all other kinds. The Arnautka spring wheat made an entire failure, both fall and spring sown. It had an extra chance, but failed to mature any grain.

Princess Anne County, Va.—In 1869 I raised 1⅛ bushel of the Schonen oats from the quart of seed sent me from the Department. Last spring I sowed one bushel, giving the eighth to a neighbor, and I have harvested 25 bushels as good as the original seed.

MIXED HUSBANDRY FOR THE SOUTH.

Newton County, Ga.—In the first part of the present year the subject of mixed husbandry was fully discussed by the agriculturists of this county, and it was generally conceded that a diversity of crops possessed many advantages over the present system—one leading and almost exclusive crop, (cotton.) We supposed a radical change would be the result of the investigation and the convictions expressed; but we find that instead of a reduction in the area devoted to cotton there was an increased acreage planted. Nothing but superabundant cotton crops and unremunerative prices will be likely to direct the energies of our farmers to mixed husbandry.

Kemper County, Miss.—Corn and cotton are the principal products of this county—the only marketable products. The people have been pushing the production of cotton to the exclusion of other crops, depending in a great measure on the West for corn and meat. It is to be hoped that, as the price of the former has fallen, our farmers will give more attention hereafter to making their supplies at home.

Prairie County, Ark.—The low price of cotton will cause considerable distress here. Many of our planters are disgusted with the so-called king.

Surrey County, Va.—All crops short. In this immediate neighborhood crops are much inferior to those of last year, and when it is remembered that last season's crops were extremely short, some idea can be formed of the meagerness of the present product. We shall have nothing to spare, and the most rigid economy will hardly carry all through to another harvest. Many are compelled to begin on the present crop too soon. It is hoped that one good result will follow these two disastrous seasons, viz., that more for home use and less for sale will be the rule another year—fewer peanuts and more corn, potatoes, peas, &c.

FREE LABOR IN NORTH CAROLINA.

Pasquotank County, N. C.—There are more evidences of recuperative energy and thrift, and of returning prosperity among our people, than have appeared at any time before since the close of the war. The former slaveholders are beginning to realize the fact, and are frank to confess it,

that farming is more profitable with hired labor than with slave labor; and all are becoming convinced that the peculiar institution kept down energy and enterprise, and was a curse rather than a blessing.

THOROUGH CULTIVATION FOR COTTON.

Marengo County, Ala.—From careful observation during the past two seasons I am convinced that thorough preparation of the soil, resulting from deep plowing and under-draining, will insure a fair crop of cotton in any season. To this add the liberal application of a good fertilizer, and early maturity will anticipate the advent of the cotton worm.

OAK TREES DYING.

Surry County, Va.—Our forest oaks of all kinds are dying at a fearful rate. If it continues another year at this rate, we shall have none but dead oaks. The result is attributed to two causes: first, the severe droughts of last year and this season; second, to the ravages of a black caterpillar, which is rapidly eating the leaves, and which seems to be as abundant as the leaves themselves.

[*Anisota (Dryocampa) Senatoria.* Hüb. Yellow-striped oak worm of Fitch. The eggs are deposited in clusters under leaves. The larvæ are social in habits, feeding together in companies, and attain their full size in August and September. They descend and bury themselves six or eight inches under ground, and remain as pupa in the earth until the last of June or the beginning of July, when the perfect moths appear, and the females lay their eggs for another generation.—T. G.]

KAUFMAN COUNTY, TEXAS.

Kaufman County, Tex.—This county has shown a wonderful adaptability for all the products that have been tried thus far, and farming yields larger profits here than any other business. The following is a fair average yield of the products named: Wheat, 20 bushels per acre; rye, 60 bushels; oats, 90 bushels; barley, 80 bushels; corn, 35 bushels; white potatoes, 150 bushels; sweet potatoes, 300 bushels; beans, 35 bushels; peas, 35 bushels; cotton, 1,400 pounds.

WINE MANUFACTURE IN SOUTH CAROLINA.

Orangeburg County, S. C.—The manufacture of wine is receiving a good deal of attention in this county. The Scuppernong grape proves to be the best for this climate and soil.

FATTENING CATTLE.

Piscataquis County, Me.—Fattening cattle are in excess of the number of last year, and in poorer condition.

Franklin County, Me.—Condition decidedly below an average, owing to reduced feed caused by drought.

Orange County, Vt.—More cattle will be fattened than usual, but not so well fattened. Much hay has been fed out before the usual time, hence winter feed is likely to be scarce.

Norfolk County, Mass.—About the same number as last year; condition better. A dry season is better for fattening than for milk.

Kent County, R. I.—The drought has caused sheep and young cattle

to be sent to the butcher, which ought to have had another year's growth.

Westchester County, N. Y.—Fewer cattle to be fattened; hay very high in price; turnips a total failure.

Ontario County, N. Y.—Cattle and sheep scarce; horses more plenty.

Hudson County, N. J.—Cattle not in as good condition as last year.

Beaver County, Pa.—Sheep scarce and cattle plenty. Where there were 100 sheep six years ago there are not 40 now. Farmers are bringing in western cattle to fatten.

Northumberland County, Pa.—Cows are selling lower than several years ago. Hogs are again becoming plenty.

Wythe County, Va.—About the same number as last year, but in better condition, as there has been plenty of grass.

Surry County, Va.—More than the usual number of cattle and sheep will be slaughtered this fall. About the usual number of hogs to kill, but there will probably be much lean pork, as there is not the corn to spare to fatten them.

Caldwell County, N. C.—Cattle in fine condition; pasturage unusually fine; a few cases of distemper, called by some dry murrain.

Carrituck County, N. C.—There is a less number of fattening cattle than last year, but an improvement in condition.

Barnwell County, S. C.—Cattle are not fattened for market in this county. They are taken from the pastures and woodlands to the butcher, and are in fine condition for beef until late in the fall and in the winter, when the grass begins to dry out, when those intended for beef are turned into the corn fields, where they get the gleanings and late grass.

Morgan County, Ala.—Pastures first rate, and beeves very fat.

Manatee County, Fla.—Cattle in fine condition in the range. The shipments from this county have been large this year, hence the stock is reduced.

Collin County, Tex.—Fine corn crop, and there will probably be 1,500 to 2,000 head of beef cattle corn-fed for southern markets. The number of beef cattle is annually decreasing in northern Texas, in consequence of the large number driven to Kansas.

Titus County, Tex.—Cattle in fine condition. They are fattened on the prairies and in the woods.

Milam County, Tex.—Stock cattle improving and increasing in numbers. Horses improving in breed and increasing in numbers. Hogs decreased 10 per cent. Failure of the mass. Sheep doing well. Large numbers of the above stock in the county.

Kaufman County, Tex.—Cattle usually keep fat all winter. Feeders begin to corn their stock about the middle of November, continuing until February, when the cattle are ready for market.

Braxton County, W. Va.—In good condition.

Kanawha County, W. Va.—Beef cattle scarce, being thinned out to supply laborers on railroads.

Monroe County, W. Va.—Cattle annually increasing in numbers. Fattened well, and are now being driven to the feeders of Pennsylvania and to Baltimore and other markets.

La Salle County, Ill.—More being fed than usual.

Lee County, Ill.—All that can are investing money in fattening cattle. Farmers seem to have a cattle mania.

Pike County, Ill.—Scarce, and prices high.

Warren County, Ind.—There is a great increase of fattening cattle, owing to increased numbers brought from Texas. They are of better

quality than those first introduced, and under better regulations there is no Spanish fever.

Lake County, Ohio.—An unusual number being grazed. Condition very fine.

Butler County, Kans.—Preparations are being made to winter about 20,000 head of Texas cattle in this county, at $4 per head.

Gallatin County, Mont.—Our cattle are, as usual at this season of the year, highly fattened upon the native grasses. Our stock has been augmented by several thousand head imported from Texas, the Cherokee lands, and Utah.

DISEASES OF STOCK.

York County, Pa.—The hog cholera is killing off many hogs in the southern part of the county.

Elk County, Pa.—Many fine large pigs have died the past month. They drop off suddenly.

Montgomery County, Md.—The disease of hogs mentioned in last month's report continues unabated. One farmer has but three left out of sixty, and those not lost are unthrifty.

Campbell County, Tenn.—Hogs dying of cholera in large numbers in some neighborhoods.

Sullivan County, Tenn.—Hog cholera prevailing to an alarming extent.

Greene County, Ill.—Four herd of Texas cattle have been brought into the county this year against the statute, and the persons importing them were indicted at the September term of court. The Texas fever has made its appearance. One farmer has lost about twenty head, most of them suddenly. About the first of September bloody urine was an apparent symptom.

Lincoln County, Ky.—Some hog cholera, but not severe.

Boyle County, Ky.—Hog cholera becoming prevalent, and confined mostly to pigs and sows. About two-thirds of those attacked are usually lost.

Spencer County, Ky.—Hog cholera more or less prevalent in three-fourths of the county.

Clinton County, Ky.—Cholera in some parts of the county, but about twice the usual number of hogs are being fattened for market.

Owsley County, Ky.—A great many hogs dying of cholera. Some farmers have lost all they had.

Des Moines County, Iowa.—Hog cholera prevailing extensively.

ADDRESS AT THE ILLINOIS STATE FAIR.

The following address was delivered by the Commissioner of Agriculture at the fair of the Illinois State Agricultural Society, at Decatur, on the 28th of September last:

FARMERS OF ILLINOIS: It gives me unalloyed pleasure to greet, at this annual festival, the associates of former years of rural labor and experiment, generous rivals in my stock-breeding efforts, and intelligent cultivators of as rich a soil, as a State, as this or any other nation can truthfully boast. Worthy of such a soil are its noble occupants, the young, the vigorous, the spirited and intellectual, drawn from the seaboard States, and from countries beyond the sea, by the magnetism of these broad and beautiful prairies. Year by year their taste and skill and industry are giving new touches of beauty to a landscape that was ever beautiful, uniting utility with grace, and presenting a scene instinct with life, unexampled growth, and tireless activity.

This is indeed a country of surprises and anomalies to the emigrant. With no woodman's tedious labor, no mingling and manipulation of incongruous strata of intractable soils, no amelioration with fertilizers, a fair, fertile area, a farm ready made, lies invitingly before him. He has only to break the soil, deposit the seed of maize in the congenial earth, which forthwith prepares to laugh with a generous harvest, without even the premonitory tickling with the hoe; and, strange enough, as culture advances, and crops and herds increase, in this inverted order of things, little belts of forest spring up, groves dot the varied landscape, the monotony of which is broken by a display of the lovely lines of forest scenery.

The evidenc so profusely presented all around in every section of this exhibition, in the magnificent array of farm stock, the wonderful abundance and variety of the fruits of the soil, and the marvelous ingenuity and skill in the farm implements adapted to almost every want of agriculture, attest the energy and zeal with which you press forward in the race of agricultural improvement, and constitute an earnest for, and a guarantee of, greater triumphs in the future.

In a region less favored by nature, or one in which the soil is exhausted by constant cropping in some special and exhaustive culture, it is a labor most herculean to attain the highest fertility and the greatest productiveness and profit of farming. Here you have a virgin soil, or if deteriorated in places by unskilled husbandry, still not beyond the reach of speedy recuperation at small expense of money and effort. This is an advantage of priceless value; improve it; arrest the first steps of deterioration. In this connection you will pardon a few suggestions which have long borne with the weight of conviction upon my mind.

THE WHEAT SPECIALTY.

In the central portion of the West, I have no hesitation in declaring that wheat-growing as a specialty should cease. It may be tolerated by the pioneer farmer, without capital, who adopts it as an inevitable necessity of his poverty, and as an expedient for exchanging a part of the intrinsic value of his farm for houses and implements, for horses and cattle, for fences and for other improvements. The danger is, that having converted half his fixed investment into working capital, he may by force of habit continue to reduce its productive value, until his improvements are worn out, his surplus wasted, his fields barren, and the strength of his manhood gone, leaving him only the infirmities of age with which to renew the battle of life upon other and untried fields; or if he enriches himself while despoiling the land of its fatness, he entails hard labor and comparative poverty upon his successor. It is a practice unworthy of this age of progress, and of the wonderful capabilities of the soil which it impoverishes; it is one that engenders weeds, deteriorates seed, discourages system, and repudiates science. The vandals of cultivation should be kept on the outskirts of the domain of agriculture.

Exporters of breadstuffs and political enthusiasts, who neither know nor care for the interests of the farmers, sometimes prate of the great value of cereal exportations. It is, and ever must be, if persisted in as a settled policy, and relied upon as a permanent source of prosperity, an unmitigated curse rather than a blessing. It disturbs the equilibrium of production, despoils the soil of its fertility, fattens a horde of go-betweens, and often gives the larger portion of the crop for the transportation of the remnant. No man in his senses, or unblinded by the glare of gold, can fail to see the wastefulness of the exportation to another continent of so bulky a product as wheat or flour. If, as is asserted, the price of the quantity consumed at home is fixed by the price of that which is sold abroad, the comparatively large exportation of last year might as well have been burned with the straw, so far as the grower was concerned, for the reduction in the home consumption far exceeded the value of the exports at the seaboard.

Very few, indeed, realize the comparative paucity of our exports of wheat and flour. In forty-three years, up to the close of the fiscal year 1868, the wheat exported was less than the quantity produced in the United States in 1869, and the wheat and flour together would aggregate little more than the crops of the past two years, namely, 236,942,887 bushels of wheat, or with flour included as wheat, 670,900,182 bushels.

Another consideration is found in this fact—but one nationality, Great Britain and its dependencies, requires it; the purchases of all other nations are usually a mere bagatelle—not worth consideration. Thus we depend practically upon supplying the necessities of but one single people, and have in competition with us all the wheat-exporting nations of the earth; and the extent of those necessities varies with every change of season, and our share in the supply fluctuates with every caprice of trade.

A nation that lives by exporting wheat five thousand miles by land and sea must have a short existence. It is a folly which the practical sense of our farmers will never practice extensively, the vestiges of which will vanish gradually as population increases and advances westward. Let our agricultural exports increase in meat and cheese and wool, and in a hundred extended and valuable products of agriculture, not not in wheat.

TRANSPORTATION A BURDEN.

The burden of transportation is one that must ever bear heavily upon the farmers. Should ship canals, of sufficient size for the use of steam power, ever be opened to the sea-coast, or should a double-track freight railway, on which continuous trains could be run at lowest possible freights, ever be constructed, either by the United States or by a company under a charter drawn in the interest of the people, a burden of monopoly and excessive charges might be removed, but the expense would still be unendurable in the transportation of certain heavy products; the necessity would still exist for converting grass into butter and cheese, corn into beef and pork and high-wines, roots and hay into mutton and wool, (and, better still, into woolens and worsted,) and the elements of earth and air, through the alchemy of labor, into new and desirable forms of production required by the increasing wants of advancing civilization, of high value in proportion to bulk or weight, and of small expense for transportation in proportion to value.

The time has come when the farmers, in the exercise of their political prerogative, and in the strength of imperious numbers, should combine to protect themselves against the usurpations of railroad monopoly, and to thwart the schemes of gamblers in railroad stocks, who, with equal unscrupulousness, "water stock," and despoil the honest stockholder, and fleece the public with high fares and excessive freights. If farmers have no power to protect themselves, then they are indeed at the mercy of a set of reckless gamesters.

MEAT PRODUCTION AND FARM ANIMALS.

It is not alone the fact that it costs ten times as much for the transportation of a dollar's worth of cereals as for the same value in animal products, that I recommend more attention to the live stock of the farm. That is a question of markets and present profits. It is also a question of fertility, of a systematic and rational agriculture, and the future value and permanent productiveness of the farm. I have the satisfaction of knowing that the true philosophy underlying this question is well understood by many farmers in Illinois, and, as a consequence, that some sections of your fertile area is yearly increasing in productive value through the restorative agency of stock farming. The high rentals in England are obtained by the restorative effect of green cropping and meat production; the feeding of the refuse of beets in France and Germany, on the beet-sugar farms, results in more beef and mutton, and more wheat, in addition to the sugar, than were secured under the old system. So it will be in Illinois with any system that shall enable its farmers to carry increased numbers of farm stock; with the increase of cattle there will come, in due course of crop rotations, increase of cereals, vegetables, and fruits required for the use of man.

It is gratifying to learn that the farmers of Wisconsin, Minnesota, and other wheat-growing States, are feeling an increasing interest in farm stock, and enlarging the numbers of their herds. They are learning wisdom by the sad experience of last year's prices.

In view of the despondency so prevalent of late among wool-growers, allow me to call your attention to accounts of profit and loss received from our correspondents, which show conclusively, that while some by their own exhibit have lost money in keeping sheep, others have realized a profit that should satisfy any reasonable expectation, and it clearly appears that these losses have been the direct result of that despondency, leading to neglect and carelessness, and that the profits have come naturally from increased attention, judicious adaptation to changing circumstances, and a moderate exhibition of pluck and persistence. Sheep left to the mercy of scab and foot-rot, or exposed to the severity of winter storms, or the risk of starvation in seeking subsistence under the snow, or at the base of the straw stack, should not be expected to secure a satisfactory balance sheet at the reckoning day. There is a scarcity, notwithstanding our assumed surplus of sheep, of juicy, fat, and savory mutton. Its production is everywhere a concomitant of good farming, and as lands advance in price, and the tastes and purses of consumers favor the change, good fat mutton and heavy spring lambs will be produced abundantly and profitably upon the prairies of the West. But should a farmer make the mistake of keeping a flock of mutton sheep year after year for their wool alone, it should surprise no one to hear the complaint that mutton sheep are not profitable.' There is abundant room in this country both for the long and the short wools, and I hope never to see the time when their numbers shall be less than at present.

The raising of swine, a remunerative branch of industry in connection with corn-growing and cattle-feeding, demands the attention of farmers toward a mode of rearing and feeding which shall mitigate the losses from disease, which are in some places so severe as almost to exterminate the porcine race. Could these cases be obviated, a percentage o profit which few industrial callings could equal would be added to the gains of pork production. I have noticed that the disease known as "hog cholera"

appears mostly in connection with feeding in large numbers with a single variety of food. The hog is omniverous, and does not long continue to thrive on corn alone, or on distillery slops, but requires variety and bulk as well as nutriment. While cure in hog cholera is an almost hopeless task, prevention is easy.

I am glad to see by evidence all around me that the horse, the noblest of all farm animals, is not neglected in this State. The opportunity for the exercise of taste, skill, and science, afforded in the breeding of horses, is worthy of high ambition, and no man is fit to train a horse who cannot control his own spirit, and exhibit the virtues of patience, gentleness, and firmness.

NEW INDUSTRIES.

He is a benefactor who will introduce among you a new plant from which food may be obtained, or discover a method of utilizing one already known, who will establish a factory for using a waste product of agriculture, or simplify or economize a process already employed. There are those in the Eastern States who prosper in the collection of marine algæ, the *Chondrus crispus*, or Irish moss, for edible and fining purposes, and various sea-weeds for fertilizers; who pulverize the leaves and tender twigs of the hardhack of the pastures for the tannin they contain, and who amass fortunes by the freezing of fat turkeys in winter to sell in a frozen state in summer, like congealed blocks, from the recesses of an ice-house. The industrious poor of the South find a profitable business in the collection of sumac; the people of Southern Florida are coining thousands from garden patches in the culture of bananas and pine apples; and other products, as oranges, lemons, limes, and figs, fiber from ramie, paper stuff from cane, and oil from the *Ricinus*, are engaging special attention.

It is often a minor industry which yields superior profits to those engaged in it. There are sources of wealth in the rich flora of the West which are now neglected or spurned, and waste products which might be utilized to great advantage. The flax fiber, which you formerly cast aside as worthless, is already used extensively in the manufacture of tow bagging for enveloping cotton bales, and enough is probably wasted to supply the southern market with this substitute for jute bagging. A grass (the *Spartina*, or cord grass) grows in this State in the rankest luxuriance, on the swampy bottoms on the Mississippi, which makes an excellent paper, and a profit is already made in its manufacture.

Let the long list, of which these are but random samples, be extended, and new rewards be offered to labor, new premiums for industry and ingenuity, by your societies, leading to the development of new industries, some of which may be small and others amount to millions in their full development. There is work for all; and with this wide variety will come new outgrowths and applications, involving more labor and new creations of wealth.

I have aimed to make the Department of Agriculture a medium of these new developments, and have shown to Congress that we have been importing a hundred millions annually which we have good reason to believe may be produced at home, with benefit to our monetary exchanges, and with still greater advantage in diversifying production, in furnishing profitable labor to the swarms of willing laborers yearly approaching our shores, and in adding to the personal comfort and prosperity of all laboring classes. These products consist of fruits, grains, and other edibles, textiles, gums, sugars, dyes, and medicines. Of the latter, *Cinchona*, yielding the quinine of pharmacy, has already been propagated with success, in the expectation of being able to establish a cinchona plantation among the mountains of the South or in Southern California, in imitation of the successful experiment of the British government in India.

SUGAR.

A few industries may be profitably extended, and the time now seems ripe for such extension. Sugar is a product required in annually increasing quantity, for the production of which favorable soils and circumstances combine; and American enterprise, in the spirit of a true national economy, must eventually supply the demand from native resources of soil and labor. More than a half million of tons, costing $70,000,000 in gold, is now required per annum; and of this but one-tenth is produced upon our soil. With sirups, $100,000,000 will scarcely pay the first cost of a year's consumption of sweets, and, including transportation and dealers' profits, $125,000,000 will not suffice to settle the bill. Europe, with no opportunity to produce sugar from cane, has in the last half century supplied her teeming millions from the juices of the beet, and from this source alone has made a contribution of one-fourth to the total aggregate of the sugar production of the world. We have the power, in the next quarter of a century, of satisfying the home demand for saccharine products, either from the cane or the beet alone, but with both we can scarcely fail of attaining a result so essential to the national weal. The experiment at Chatsworth, so unfortunate in many respects, will assure the success of others through its own failure, and through a better adaptation

of means to ends; and by the aid of improved processes for defecating the raw juice, now in very successful operation in Europe, Chatsworth may ultimately redeem its failure, and establish a decided success. Two beet-sugar establishments go into operation during the present autumn in California, where the promise of rich returns is cheering; and the experiment has been successfully demonstrated in the high latitude of Northern Wisconsin.

Little time will elapse ere the sugar consumption will be equivalent to $200,000,000 per annum; and it is my belief that the West will then produce no small share of the required quantity upon her own soil. It will then be recognized as a leading interest in agriculture, as it is now upon the continent of Europe; and cattle-feeding will then thrive as it never has before, and wheat and other products, as part of a judicious rotation, will attest the increasing fertility of our prairie soils, and attend the development of a better system of scientific agriculture.

The most prosperous and productive agricultural sections of Europe derive their greatest advantages from beet sugar. If we do not profit by their example, the reason will be found in the greater results obtained in the culture of the cane. Let us solve this problem of abundant sugar production speedily, and save to the nation the millions needlessly spent abroad.

SILK PRODUCTION.

It is not strange, in the beginning of our career of industrial development, that the little silk-worm has been neglected as a source of employment and wealth, and the national appreciation of *Bombyx mori* may have been modified by a remembrance of the *Morus multicaulis*. It would be creditable and profitable to us, as a nation, could we outgrow the tendency to *mania* in the initiation of a new rural pursuit, and thus avoid its disastrous abandonment and deep-seated prejudice, which long prevent its successful introduction. The signs of the present time indicate, for the rearing of silk-worms, an assured success, and a permanency of decided promise. As labor multiplies, an interest like this, capable of almost indefinite extension in manufacture, acquires vastly increased importance. Already four of the seven branches of silk production can compete with foreign nations, viz: "Throwing" of the silk or preparation of the threads, the dyeing of silk, the regeneration and spinning of silk waste, and the automatic weaving of plain stuffs. In silk-weaving England now employs 200,000 persons, and the utilization of *silk waste* in France requires 30,000 workmen, and realizes $20,000,000. We believe we can yet compete with outsiders in rearing the worms, reeling the cocoons, and weaving figured goods. California already produces millions of cocoons, in a climate in which the worms are thus far as healthy as any in the world; and the Eastern and Southern States are beginning to embark in the business. The sale of eggs for exportation at $4 to $10 per ounce, has been temptingly remunerative since the prevalence of the silk-worm disease in Europe, which inflicts an annual loss upon France alone, according to M. Thiers in a speech in the Corps Legislatif, of $20,000,000 annually. In eighty years, the annual value of the silk manufacture of France has advanced from $5,000,000 to $150,000,000.

Who will venture to estimate the value of silk goods in the United States thirty years hence, manufactured from American cocoons? Thousands of individuals (in suitable climates) incapacitated for the severe labors of agriculture, can compete successfully for the supply of the raw material.

It may be an interesting fact to the dwellers in these prairies, begirt with osage orange hedges, that the naturalist of the Department of Agriculture has readily obtained cocoons of beautiful silk, from worms fed exclusively upon the *Maclura aurantiaca;* this experiment has been confirmed by a late communication received at the Department, from a reliable correspondent, who states that he has, the past season, fed upwards of ten thousand worms, with perfect success, upon the osage orange alone.

SOIL IMPROVEMENT.

Your soil is wonderfully fertile. You may be disposed to consider it inexhaustible. It is an injurious, if not a fatal error. The coffers of the most opulent treasury, constantly drawn upon, will eventually become empty. Statistics of production attest that repeated crops of wheat, on your best lands, show rapid deterioration; every crop taken from the soil, with no return, reduces the capacity of the farm for production in arithmetical ratio, and its capacity for profit in geometrical ratio. Such a course may give you for a time a little more "ready money," but you are certainly robbing your heirs; it is extremely easy to deplete your best soils; it is doubly difficult to renovate them; how difficult, you can only realize after trial. I have had a full experience of this in Maryland, having brought the value of a thousand acres, after years of labor and toil, from $10 up to $60 per acre and repaid its cost. The difference between its original and improved yield in that period, which represents the measure of loss wrought by former mismanagement, would have been a fortune in itself. I can point out farms in Maryland, thirty years ago reduced to barrenness and the meager value

of $2 per acre, through repeated cropping with corn and tobacco, which are now richly worth $80, through the influence of clover, fertilizers, regular rotations, and judicious management generally. Then they could only yield a miserable support to their proprietors; now they maintain their owners in comfort and even luxury. It has been estimated that 100,000,000 of acres of these worn-out lands have been thrown out of cultivation in the South. Beware of a similar experience in the West; you are on the road to the same ruin, which can only be averted by a prompt use of restorative agencies, and the exercise of an enlightened judgment in all the operations of your agriculture.

STEAM PLOWING.

Among the improvements of the future, inevitable in successful accomplishment and beneficent in its results, I deliberately place that of steam culture. Its success is already assured in Europe. Five sets of steam machinery are now in active and profitable operation in this country—three upon sugar plantations in Louisiana, and two on a cotton plantation in Mississippi. A set run by two 20 horse-power engines, cultivating to the depth of twenty inches, last year produced a hogshead of sugar more per acre than horse-power culture by its side.

We shall make changes in this English machinery—we may perfect a thoroughly American machine (though it should not be forgotten that the Fowler method is based upon an American invention) before the use of steam in culture becomes general upon our farms; but that result is sure to come, and I see no reason why it should not soon be reached. It is folly to assume that the noble art of agriculture is to derive no benefit from steam, or that commerce and manufactures must exclusively appropriate an invention which has already wrought a revolution in the industries of the earth.

THE DEPARTMENT OF AGRICULTURE.

In all these progressive movements, briefly hinted at in these remarks, it is the office of the Department of Agriculture to co-operate. Its functions are various, and means of accomplishment extensive. Its divisions embrace statistics, agricultural chemistry, natural history, botany, and practical horticulture. The statistical division is the office of publication, from which are issued the annual report, (275,000 copies of the last issue,) the monthly report upon subjects of special investigation, and statements called for by Congress, and the organization of agriculture. It utilizes the correspondence of the Department, special and regular, pursues original investigations through the aid of practical experiments and trained experts, employs consular facilities in obtaining the facts of foreign agriculture, and appropriates whatever is valuable in the records of domestic and foreign societies.

A well-appointed chemical laboratory has been established and is in active operation, and whatever light chemistry may be expected to shed on agriculture is hoped for from this and other similar efforts to keep the science and the practice of agriculture on an even line. In the experiments with sugar beets it has already participated, and will continue to aid in the endeavor to make of their manufacture a great industry. It has been my desire to have an extensive series of analyses of the cereals from the different soils and varied climates of this extensive country, and to that end I would here ask further contributions of best samples, from different sections of the State, which may illustrate the effect of altitude and meteorologic influences upon the growth of these plants. These may be sent free to the Department. Agricultural and economic geology and mineralogy, being intimately allied with agriculture, are also represented in a collection made in the chemical division.

The division of entomology is one of great practical importance. The loss to the cotton crop by insects is assumed to have been forty millions of dollars in a single year, and the total annual loss to farm crops has been placed by good authority at three hundred millions per annum. Under the direction of the entomologist is a museum of natural history, and an economic collection of the products of agricultural industry in all the processes of their manufacture, including textiles, dyes, sugars, alimentary substances, and medicines.

To the experimental garden is now added an arboretum, including 1,500 varieties of trees and shrubs, affording an opportunity to the student in forestry and arboriculture which cannot elsewhere be found in the country. Greatly needed plant-houses of an aggregate length of 470 feet are now in process of erection, for the propagation of new varieties of semi-tropical fruits for the South, new textile plants, and many others useful in the arts for acclimation.

The system so successfully inaugurated for exchanges of books and documents of scientific and industrial societies, and also exchanges of seeds and plants, has been extended to all parts of the world, and promises increasingly valuable results. It has already proved highly useful in our system of acclimation and dissemination of new and useful plants.

I am prepared to maintain, and satisfactorily to show, that our seed distribution of

the last three years has already added millions to the value of our production. The success of the Excelsior oats has been remarkable, uniformly increasing and generally doubling the yield, and the White Schönen oats have. in some instances, yielded at the rate of 104 bushels per acre. The Tappahannock, White Touzelle, and Arnautka varieties of wheat have given general satisfaction, yielding highly remunerative results to the first cultivators, and vastly greater advantages in the aggregate to those who have continued the cultivation. I greatly regret the inability of the Department, from the recent meager appropriations, to extend more widely and rapidly the benefits of this distribution.

Such are our aims and facilities for accomplishment. To attain the best results the active co-operation of all intelligent and progressive farmers, and all organized agencies for rural improvement, is an absolute necessity. In closing, permit me to ask this timely aid and willing association in efforts to elevate the character and increase the profits and influence of American agriculture.

VARIETY IN SOUTHERN PRODUCTIONS.

The necessity of resorting to a more diversified system of industry in the South has been often urged in these reports, and by planters of intelligence and foresight, and at last public attention has been directed to hitherto neglected products. Foremost among those who have been active in investigating the indigenous resources of that section is Dr. F. P. Porcher, of South Carolina, who made a report at a late meeting of the Emigration and Agricultural Association of that State, on the extraordinarily rich flora of the various climates found within the belt of States extending from Maryland to Florida and from Tennessee to Texas, with elevations varying from the sea-level to an altitude of 6,000 feet, with every variety of soil and surface, including elevated plateaus, mountain slopes, rich uplands, inexhaustible alluvion, and the fertile siliceous soils of the Sea Islands, all contributing to produce a wonderful variety and exuberance of vegetation. Of the plants included in this list, some single article, now neglected, may become a great staple; or an improved process in the arts, applied to some of these products, may give rise to a new industry, as was the case with indigo, rice, and cotton, the beet in France, and the silks of Italy. The plants are thus classified:

NEW AGRICULTURAL PRODUCTS.

Substitutes for cotton: Ramie or China grass, *(Boehmeria tenacissima;)* aloe, eelgrass, *(Zostera marina,)* reed mace, *(Typha latifolia.)*

Plants yielding fibers: Ramie, esparto grass, sisal hemp, *(Agave Sisalina,)* bear grass, *(Yucca filamentosa,)* jute, (which the Department of Agriculture is now introducing from the East Indies;) Hemp, aloa or Indian aloe fiber, common in Florida; or the leaves even of the plantain, banana, or aloe; flax, white rush, *(Spartina juncea,)* fiber from the bark of the cotton bush, as well as from the palmetto, (*Chamærops palmetto.)*

Plants yielding paper stock and fiber: Agave, (*Agave Sisalina* and *A. virginica,*) aloe cane, (*Arundinaria gigantea* and *A. macrosperma,*) Chinese sugar-cane, cat-tail, (*Typha latifolia,*) Indian corn, esparto grass, the pulp of poplar, camelina or false flax, (*Camelina sativa,*) sun-flower, okra, palmetto.

Plants yielding sugars and saccharine substances: Chinese sugar-cane, sorgho sucre, black imphee, Indian corn, cut thickly and cut before ripening; sugar beet to be planted at the South.

Luxuries: Chinese tea plant, (*Thea viridis,*) European olive, tobacco, several varieties; chiccory, (*cichorium intybus,*) silk. Some new breeds of silk-worms feed on the leaves of the ailanthus, the oak, and even the castor-oil plant.

Fruits: Apples, pears, and peaches planted in pine lands, and protected by natural pine forests. The fruits should be canned, as at the North.

Berries: Dried for export, for canning, for preserves, and for liquors; this business is already commencing in North Carolina. Strawberries, blackberries, raspberries, and cherries, as well as vegetables on truck patches, can be profitably raised as market crops near cities, and all can be profitably canned as a regular business.

Liquor: Distilled from corn, rye; from fruits, as apples, peaches, and cherries; also wine from grapes, particularly the Scuppernong, which is indigenous in the South, and very productive; it bears early, and is said not to be injured by insects or rot; it makes an effervescing or foaming wine, and, with proper treatment, a rich and delicious still wine. The thermal belt along the mountains, in the northern parts of the Carolinas, is considered particularly well adapted to grape culture.

Ales and beer: From native materials; should be fermented in properly constructed, deep, underground cellars; such cellars are equally essential at the South to all wine-makers.

Plants yielding edible farina, starch, &c.: Arrow-root, Bermuda and Florida; potatoes, Irish and red yam; rice, Indian corn, Jerusalem artichoke.

Plants yielding oils: Medicinal, dietetic, and for lubricating and burning purposes; flax, olive, castor bean, gold of pleasure, ground-nut, bene, sunflower, cotton seed, Chinese tallow tree, *(Stillingia Sebifera.)* This latter plant is naturalized, and grows abundantly near Charleston, South Carolina. Its seeds are rich in oil, and yield also stearine and elaine.

Plants yielding forage: Ramie, common clover, mesquit, and other southern grasses; Japan clover, *(Lespedeza striata,)* a new forage plant of great promise; Indian corn, Jerusalem artichoke, and even spurrey and couch grass, may answer for winter pasturage, as they grow on very poor, sandy, and worn-out soils; but are not favorites with northern farmers.

Wood for house-building, furniture, utensils, &c.: Oaks, hickory, walnut, cypress, poplar, pine, pride of India, &c.; trade in boards, staves, and hoops.

Ware for baskets: Osier willow, *(Salix Forbeyana,)* Carolina willow, *(S. nigra;)* spartina, &c.

For hats, caps, mats, &c.: Palmetto leaves, saw palmetto, wheat and rye straw, wire grass for mattings and curtains, fescue grass, reed mace, *(Typha latifolia.)*

Material for beds: Carolina long moss, boiled, rotted, and dried, can be made a profitable business; cotton fiber, saw palmetto, cat-tail or reed mace, beech leaves.

Material for brooms: Guinea corn, *(Sorghum vulgare,)* Doura corn.

For packing fruit, merchandise, &c.: Delicate leaves of ferns.

For ship timber: The various woods: Live oak, locust, pine, hickory, &c.

Plants to be cultivated as food for animals: Mulberry, (Herbemont's, and the White Everbearing, yield immense quantities of fruit;) seeds of sunflower, tubers of Jerusalem artichoke.

Charcoal, lamp-black, and turpentine: From the pine.

Saw-dust is a chief source of oxalic acid; formic acid and wood spirit are prepared from it as a waste product, and are useful in many of the arts, and in the calico and other manufactures.

Opium poppy *(Papaver somniferum)* and common garden poppy. Opium is obtained by making slight incisions in the unripe capsules a few days after the fall of the flower; a white substance exudes, and forms in tears on the edges of the cuts, which, after standing twenty-four hours, is scraped off in brownish lumps. Castor oil, from the castor bean, is used as a medicinal agent, as a lubricator, and the seeds as a manure; yields 15 to 25 bushels per acre; the seeds yield about one-fourth of their weight in oil.

Alkaloids and resinoids: These command ready sale at the North; podophylline, from the wild jalap of the South; hydrastine, from hydrastis; iridin, from the blue flag; leptandrin, from leptandra—all natives of the South.

Pearl and other ashes, lye, and soap: From myrtle and other berries; oak and other woods.

Acids: Hydrocyanic, acetic, and pyroligneous, from distillation of pine; citric from limes and lemons; and oxalic, used in dyeing, from sawdust, and from sorrel and dock.

Tinctures from native plants.

Medicinal leaves and flowers: To be cultivated for sale as aromatics; sage, hoarhound, hops, peppermint.

Medicinals, oils, and essences: From sassafras, lemons, several species of wild sorrel, bene, and jessamine flowers.

Seeds, oils, and wax: From flax, mustard, and myrtleberry.

Potash, soda, niter, barilla, and kelp: From the saw palmetto, the ashes of which are exceedingly rich in potash; fumitory, wormseed, saltwort, *(Salsola kali,)* barilla, glasswort, *(Salicornia herbacea;)* (the last three grow on the coast;) corn, potatoes, and pea vines.

Iodine and kelp: From fuci and other sea-weeds.

Ammonia: From fumitory, wormseed, pea vines, and marsh mallows. These are all native plants, and are rich in potash, and can be turned under the soil as manure.

Balsam: From the balsam fir of the mountains.

Essences and perfumes: From roses, jessamine, and other flowers.

Salt of sorrel and binoxalate of potash: From dock, sorrel, &c.

Medicinal plants: Wild jalap, *(Podophyllum peltatum,)* ginseng, Carolina pink, Seneca and Virginia snake roots, blood root, &c.

Materials for tanning leather; also for dyestuffs and calico printing: From black, white, and red chestnut, Spanish and other oaks; from hemlock forests; from the leaves, seed vessels, barks and roots of various plants growing abundantly at the South.

Inks: From the tannin yielded from the unripe persimmon, and by barks, leaves, or fruit of the gum tree, oak, alder, walnut, &c.

Dyestuffs and materials: Blue, yellow, green, and black, from the walnut, agrimony, persimmon, maple, sweet leaf, vitis, indigo, &c., all native plants.

Quercitron: From the black oak, *(Quercus tinctoria,)* which abounds in the upper districts of the State.

Bee pastures: Honey and wax as articles of trade.

Beet-root sugar: From the beet.

Hedges, in place of fencing: From the osage orange, cassina, haw, &c.

Madder, to be cultivated.

Railroad ties: From planting locusts along the lines of railroads.

CLIMATE OF SOUTHWESTERN ARKANSAS.

The following tables of spring and autumn frosts, and of rain-fall, at Washington, Arkansas, in latitude 33° 42′ north, have been compiled by Mr. J. R. Eakin, of that place, from the notes of the late Dr. N. D. Smith. The first table shows the periods of latest spring and earliest autumn frosts, from 1840 to 1867. Mr. Eakin remarks that his chief purpose is to represent the commencement, length, and close of the growing season of tender plants; the season for hardy plants being much longer. Frosts destructive to such hardier vegetation often do not occur after the middle of February, and forest trees usually remain green until late in November. In some seasons there has been no frost, although the weather has been destructive to tender plants at certain times in the spring. In such cases 32° of the thermometer, or a lower temperature, has been taken as equivalent to frost:

Year.	Latest spring frost.	Earliest autumn frost.	Length of growing season.	Year.	Latest spring frost.	Earliest autumn frost.	Length of growing season.
			Days.				*Days.*
1840..	March 30.....	October 3	187	1854	March 11.....	November 13..	247
1841..	March 23.....	October 23	214	1855	March 31.....	October 24	207
1842..	March 15.....	October 25	224	1856	March 14.....	October 16	216
1843..	April 1.....	October 31	213	1857	April 19.....	November 9...	204
1844..	March 31.....	October 19	202	1858.	March 9.....	November 8...	244
1845..	April 7.....	October 12	188	1859	April 17.....	October 28	194
1846..	April 13.....	October 18	188	1860	March 28.....	October 14	200
1847..	March 27.....	October 25	212	1861	March 21.....	October 23	216
1848..	April 1.....	November 1...	214	1862	March 24.....	October 26	216
1849..	April 16.....	November 27..	225	1863	March 4.....	October 24	234
1850..	March 29.....	October 26	211	1864	March 22.....	November 21..	244
1851..	March 8.....	November 6...	243	1865	March 11.....	November 3 ..	237
1852..	March 20.....	November 12..	237	1866	April 8.....	November 15..	221
1853..	March 4.....	November 14..	255	1867	April 6.....	.....	.....

The rain-fall, in inches, for the different months of the year, as calculated from observations continued during twenty years, is as follows:

Month.	Maximum inches.	Minimum inches.	Average inches.	Month.	Maximum inches.	Minimum inches.	Average inches.
January	10.9	1.1	4.58	July	19.5	1.2	4.94
February	14.5	0.4	4.97	August	15.9	0.7	3.97
March	9.6	1.4	5.33	September	8.3	0.6	3.48
April	13.6	2.6	5.47	October	9.4	0.8	3.93
May	16.0	1.0	4.83	November	11.3	1.2	4.73
June	8.9	0.9	4.02	December.....	9.8	1.6	4.45

In this period of twenty years, taking the average of the same date each year, only two days, January 18, 19, show a mean temperature below 40°, and only nine days a mean temperature above 80°, viz: July 8, 14, 15, 16, 17, 25, 28, 29, and August 17. These long-continued observations show that the coldest weather generally occurs about a month after the winter solstice, and the warmest weather about a month after the summer solstice.

OSAGE ORANGE AS FEED FOR SILK-WORMS.

As Mr. Riley, in the American Entomologist of September, appears to doubt the statement of one of our correspondents in regard to his success in raising the silk-worm (*Bombyx mori*) on the leaves of the Osage orange, (*Maclura aurantiaca,*) (see Monthly Report of the Department for May and June,) for the reason that the name of the correspondent was omitted, we give another letter received lately from the same source, with name and residence appended, reiterating the statement and giving a more detailed account of his experience.

G.

SPANISH FORK CITY, *Utah County, Utah Territory, September* 15, 1870.

DEAR SIR: I take great pleasure in replying to your favor of the 2d instant. I wish to state that my previous communication to you, an extract from which was published in the Monthly Report of the Department, is strictly true. Since I commenced feeding the *Bombyx mori* on osage orange, the fact has become so familiar to myself and neighbors that I did not suppose it would be doubted. If any additional testimony is necessary to confirm my statement, I can give the names of as many responsible persons, *under seal,* as may be required, as the facts are quite familiar to all the inhabitants of this town, and the greater part of the county.

This season I have fed upwards of ten thousand worms on osage orange, and they have all spun—the box of cocoons I sent you being an average sample of the crop. This is the third season I have fed and propagated the same worms entirely on osage orange, and they show no signs of deterioration; on the contrary, it was remarked by many this season who had seen them during the past three years, that they looked larger and better than they had ever seen them before. That portion of my crop fed on mulberry the past four years shows no perceptible difference, hatching out and spinning about the same time as those fed on osage orange.

I would like to have the relative qualities of the silk thus differently fed thoroughly tested, and would be pleased to forward specimens of each to any one who could do so.

My worms hatched out this season on the 8th of May, and spun on the 19th of June, feeding forty-two days, this being seven days longer than previous seasons, owing to a cold storm that occurred in May, lasting about one week, rendering them almost inactive during that time; and I have used no artificial heat either at hatching or during the feeding time.

I have paid particular attention to cleanliness and ventilation in my cocoonery, keeping the doors and windows almost constantly open, even during the night when the weather was favorable. I attribute my success mainly to our fine dry climate. We have no dews, and rain and thunder storms are of rare occurrence during feeding season.

If Mr. Riley wishes to communicate with me, I shall be happy to give him all the information I possess in relation to this matter.

Yours, very respectfully,

SAMUEL CORNABY.

Prof. GLOVER, *Department of Agriculture, Washington, D. C.*

THE LOUISIANA RICE CROP.

The annual statement of James Wood, in the New Orleans Picayune, says that the rice crop of 1869–'70 was the largest ever grown in the State, though in quality it did not compare favorably with the production of previous years. The annexed table exhibits the general progress and value of this culture, showing the receipts of the several years since 1860 at New Orleans, the years extending from September 1 to August 31, and the barrels averaging 230 pounds:

Year.	Barrels.	Av. price per bbl.	Total value.
1860	7,300	$13 00	$94,900 00
1861	8,921	18 00	160,578 00
1862	8,636	20 00	172,720 00
1863	6,873	30 00	206,190 00
1864	9,866	25 00	246,650 00
1865	11,943	23 00	274,689 00
1866	20,464	20 00	409,280 00
1867	21,663	18 00	389,934 00
1868	41,317	17 00	702,389 00
1869	57,956	15 00	869,340 00

There are now seven steam rice mills in operation in the rice-growing portions of Louisiana, and two in New Orleans, all provided with the latest improvements for thoroughly cleaning and polishing rough rice or paddy. Mr. Wood thinks that if the cultivation of rice continues to increase in the same ratio that it has in the past few years Louisiana will soon outstrip Georgia and the Carolinas in the production; and that with a little more enterprise rice could be raised that would compare favorably with any from the Carolinas or the Indies. As yet most of those engaged in rice culture are indifferent to the improvement of the quality of the seed used. The varieties commonly grown are the white creole rice, the golden rice, and the white bearded rice. Last season two or three enterprising planters sent to Honduras for another variety, which, judging from the samples cleaned and shipped to New Orleans, is equal in quality to the best Carolina. About 300 acres of the Honduras seed are under cultivation this season.

Mr. Wood estimates the rice crop of this year at one-fourth less than that of 1869. The stage of the water was such in the latter part of spring and the beginning of summer that in the parishes of Lafourche, St. James, St. Charles, and St. John the Baptist, the fields suffered severely for want of irrigation. In Plaquemines, which is the great cereal parish of Louisiana, rice was flooded freely the whole season, and there the yield will be up to the average. So far the atmospheric conditions have been highly favorable to the curing and stacking of the grain.

MARKET PRICES OF FARM PRODUCTS.*

Articles.	October.
NEW YORK.	
Flour—Superfine State	$4 85 to $5 00
Western superfine	4 85 to 5 00
Extra western	5 20 to 5 85
Wheat—No. 1 spring, (new)	1 30 to ———
No. 2 spring, (old)	1 03 to 1 15
No. 3 spring, (old)	1 05 to ———
Winter red, and amber western	1 27 to 1 32
Corn—Western, mixed	85 to 87
Oats—Western	51 to 53
State	——— to ———

* Record made as near the 1st of the month as practicable.

Market prices of farm products—Continued.

Articles.	October.
Hay—Shipping qualities	$20 00 to ———
Prime	——— to ———
Pork—Mess	24 62 to $24 75
Prime mess	21 50 to 23 50
Beef—Plain mess	12 00 to 15 50
Extra mess	16 00 to 18 50
Lard—Prime	14¼ to 16½
Butter—Western	20 to 30
State dairy	24 to 42
Cheese—Dairy	5 to 13
Factory	5 to 15
Cotton—Low middling uplands	16 to ———
Middling uplands	16½ to ———
Tobacco—Sound lugs, light grades	7½ to 8
Common leaf, light grades	8¼ to 9
Medium leaf, light grades	9¼ to 9¾
Wool—Combing fleece	55 to 60
Extra pulled	37 to 42
Texas common, unwashed	23 to 26
CHICAGO.	
Flour—White winter extra	5 25 to 7 50
Red winter extra	4 75 to 5 50
Spring, extra good to choice	5 00 to 5 50
Superfine	3 25 to 3 75
Wheat—No. 1 spring	1 05 to 1 05½
No. 2 spring	1 04 to 1 05¼
No. 3 spring	82 to 96
Corn—No. 2	63 to 63½
Rejected	59½ to 60¼
Oats—No. 2	36¼ to 37
Rejected	34 to 35
Hay—Timothy pressed, (on track)	15 00 to 16 00
Prairie pressed, (on track)	10 50 to 11 50
Pork—Prime mess	22 to 22½
Mess, (new)	——— to 25
Beef—City mess	12 to 12½
Country mess	11 to 11½
Extra mess	14 to 14½
Lard—In tierces	14⅝ to 15
No. 1	14 to 14½
Butter—Choice firkin	24 to 26
Common to medium	15 to 18
Wool—Unwashed, fine	24 to 28
Medium and coarse	29 to 30
Tub	45 to 50
CINCINNATI.	
Flour—Family	5 75 to 6 00
Extra	5 50 to 5 75
Superfine	4 75 to 5 00
Wheat—No. 1 white	1 30 to 1 35
No. 2 white	——— to ———
No. 1 red	1 18 to ———
No. 2 red	1 15 to ———
Corn—White	——— to 70
No. 1	——— to ———
No. 2	66 to 67
Oats—No. 1 mixed	43 to 45
No. 2 mixed	40 to 43

Market prices of farm products—Continued.

Articles.	October.		
Hay—Common	$12 00	to	$14 00
Loose pressed	20 00	to	21 00
Pork—City, per barrel	24 50	to	24 75
Lard—Prime steam	14½	to	———
Kettle, in kegs	17	to	17½
Butter—Choice Ohio	31	to	33
Fair to good	25	to	30
Cheese—Choice factory	13	to	15
Western Reserve	11	to	13½
Cotton—Low middling	———	to	14½
Middling	———	to	15½
Tobacco—Common lugs, West Virginia	4 50	to	6 50
Ohio	5 50	to	6 25
Kentucky	7 25	to	9 50
Wool—Tub-washed	45	to	48
Fleece-washed, manufacturing	40	to	43
combing	42	to	45
Unwashed, manufacturing	30	to	31
combing	32	to	35
ST. LOUIS.			
Flour—Spring	3 90	to	4 15
Winter	4 25	to	7 70
Super	4 00	to	4 25
Wheat—No. 1	1 35	to	1 40
No. 2	1 13	to	1 25
No. 3	1 05	to	1 07
Choice	1 25	to	1 30
Corn—Mixed	56	to	58
Yellow	67	to	69
White	65	to	70
Hay—Prime, tight pressed	17 00	to	———
Choice, tight pressed	18 00	to	18 50
Pork—Mess	25 00	to	———
Butter—Choice yellow	29	to	31
Ohio	30	to	35
Cheese—Factory	14½	to	16
Western Reserve	13	to	———
Cotton—Middling	16	to	16½
Tobacco—Factory lugs	5 50	to	6 50
Common leaf	8 00	to	9 00
Medium	9 25	to	10 00
Wool—Tub washed	40	to	47
Fleece washed	31	to	40
Unwashed combing	35	to	41
Pulled	30	to	35
NEW ORLEANS.			
Flour—Superfine	4 25	to	———
Extras, (according to grade)	5 12½	to	6 50
Corn—Mixed	72½	to	———
Yellow	79	to	———
White	78	to	80
Oats—Light	48	to	———
Prime	51	to	53
Hay—Choice	24 50	to	25 50
Prime	25 00	to	25 50
Pork—Mess	25 75	to	26 00
Lard—In tierces	16½	to	16½
Kegs	19	to	20
Butter—Choice Goshen	43	to	44
Western	28	to	32

Market prices of farm products—Continued.

Articles.	October.
Cheese—Choice factory	$15½ to $16
Cotton—Ordinary	11 to 11¾
Low middling	14¼ to 14½
Middling	15 to 15½
Tobacco—Common to good lugs, (light)	6½ to 7¼
(heavy)	7¼ to 8½
Medium leaf, (light)	9 to 9½
(heavy)	10 to 10½
Wool—Quotations nominal for all grades	———
SAN FRANCISCO.	
Flour—State	4 75 to 5 75
Oregon	4 75 to 5 75
Wheat—State	1 62½ to 1 85
Oregon	1 65 to 1 85
Corn—White	1 25 to 1 30
Yellow	1 50 to ———
Oats	1 15 to 1 37½
Hay	8 00 to 13 00
Pork—Mess	26 00 to 27 00
Prime	22 50 to 23 00
Beef—Mess	18 00 to 20 00
Lard—In barrels	11 00 to ———
Butter—State	40 to 60
Oregon	15 to 20
Overland	30 to 35
Cheese	12 to 18
Wool—Native	13 to 14
California	18 to 20
Oregon	24 to 26

THE DROUGHT IN ENGLAND.

The Sheffield Independent publishes the following record of rain-fall for the current year, as compared with the averages for thirty-four years:

	1870.	Thirty-four years' average.	Deficiency.
January	3.625	3.218	
February	2.870	2.826	
March	2.710	2.937	0.227
April	1.190	2.809	1.619
May	1.295	2.662	1.367
June	1.685	3.451	1.766
July	1.175	3.543	2.368
August	1.475	3.753	2.278
	16.025	25.199	9.625

Twelve years' observation of the relation of the rain-fall to the harvest in Yorkshire confirms the opinion that dry spring months and a good sound yield of grain go hand in hand. The rain-fall of the present year up to August 31 is only three-hundredths of an inch more than in 1868,

(then 12.38 inches,) the driest year since the observations commenced, and in both years the harvest has been very good both in wheat and barley, except that in some localities the wheat-fly maggot has been very destructive. In 1864, the next driest year, the harvest was also very good. The rain-table shows the following results: In 1859 there was a fall of 14.44 inches in the first eight months of the year, and a productive harvest. In 1860 23.08 inches fell, and the harvest was very bad; in 1861 there was a moderate fall of 14.75, and the harvest was again good; in 1862 the fall increased to 18.24, (March and July being wet,) and the harvest was again very bad; in 1863, with 16.53, (the excess in August, otherwise the driest year,) the most productive harvest of years was the result. In 1864, with 12.71, the harvest was very good, and in 1865, with 14.09, harvest was rather below average, owing to rust in August. In 1866, the great flood year, with 19.29, the harvest was very bad, and again in 1867, another flood year, with 21.33, the harvest was still worse. In 1868, with a decrease to 12.38, the harvest was very good; in 1869, with 16.23, the harvest was below average; and this year, with 12.41, the harvest is generally good.

AGRICULTURAL STATISTICS OF IRELAND.

The collection of these statistics was commenced June 1, and occupied nearly two months, about 600,000 holdings having been visited and a return made from each. The total acreage under all crops this year was 5,642,556 acres, against 5,577,780 acres in 1869. The wheat acreage shows an increase of 19,546 acres, and that of oats, 36,476. In barley there is an increase of 19,242 acres; in bere and rye, 581 acres; and in beans and peas, 760 acres. Green crops show an increase of 29,455 acres, the largest amount being in the extent under turnips, which increased 16,987 acres. There is an increase in the extent under meadow and clover of 105,119 acres, and a decrease in flax of 34,359 acres. The extent under grass is 9,990,968 acres, against 10,041,390 acres in 1869; fallow, 19,054 acres, against 20,684 in 1869; wood and plantations, 321,557, against 320,461 in 1869; bog and waste unoccupied, 4,345,789, against 4,359,609 in 1869.

The returns of live stock as compared with those for 1869, show an increase of 3,105 horses, 62,705 cattle, and 377,108 swine. Sheep exhibit a decrease of 317,211. The estimated value of horses, cattle, sheep, and pigs is £35,518,465, being an increase of £554,875 over preceding year.

DISEASES OF CATTLE IN EUROPE.

The foot and mouth disease appears to be spreading to an alarming extent in England. The Mark Lane Express states that accounts from Dorsetshire continue bad. Sixty-one fresh cases were reported in the Wimborne district. Thirty-three returns, embracing 198 cattle and 55 swine, were read at the committee's meeting at Sturminster-Newton. Sherborne returns report 232 diseased cattle on twenty-two farms; Bridgeport, 54 on nine farms. In the border county of Somerset thirty farms have the disease on them. The disease is spreading in East Lancashire. During the preceding week it broke out on twenty-seven farms and af-

fected 211 head of cattle, scattered over ten townships. In Berkshire the herds of Inglewood, Balsdon, and Templeton farms are infected. But one infected farm is reported thus far in Derbyshire. In Westmoreland 8 cases are reported. In Cumberland the disease has assumed a virulent form, and its spread is said to be of great magnitude. In the Carlisle division 27 cases are reported; 9 in the district around Cockermouth; 50 in the neighborhood of Wigton; 3 at Longton, and 37 near Brampton. The disease has broken out in Wales, on St. Twinorell's farm, near Pembroke. It has also made its appearance in Leicestershire.

The government veterinary department has received information from Berlin to the effect that the cattle plague, after breaking out in the palatinate, has followed in the wake of the Prussian army. It has extended from Coblentz to Saarbruck, and thence to the Bavarian palatinate, Northern Lorraine, and Alsace. It is supposed to have been imported from Podolia, through Upper Silesia, by means of the herds intended for the provisioning of the army. The disease is chronic in that breed, but the wants of the army are so pressing that there is no possibility of doing without these cattle, and the only thing to be done is to enforce local precautions.

WOOL-GROWING IN URUGUAY.

Mr. E. W. Loggin, of Uruguay, gives the following account of the method of feeding and managing sheep in that country:

Sheep are kept in large flocks of one to three thousand, and are taken care of by a man on horseback. They are gathered on one spot at night, and, by constant watching for a month or so, are taught to stay there. In winter they are not allowed to go off to feed until the dew is off the grass, as it is supposed to make them very thin. The rams are put into these flocks (which generally have a considerable percentage of wethers) early in October, thereby bringing the lambing on in March and April. Forty per cent. of lambs to a mixed flock is considered very good, but a flock consisting entirely of breeding ewes will give 70 to 90 per cent. It has been the custom to have two lambing seasons, one in March and one in September, but it is now generally allowed that one lambing is more advantageous, bringing as large an increase in the long run, and the sheep keeping in better condition.

The sheep are a cross of the original sheep of the country, a very loose, long-wooled sheep, something like the black-faced sheep in Scotland regarding the fiber of the wool, but I should say inferior in every other respect, it being almost impossible to fatten them. These sheep were crossed with the English Leicester and Southdown, and the pure Merino; but the English blood being found so liable to scab, the Rambouillet took their place, producing a very fine, although not a very long, wool, and plenty of it; an average flock yielding an average of 4 pounds per fleece. These sheep ten years ago were worth 12*s.* a head after shearing, but to-day would scarcely command 12*d.* Saxony rams have been introduced of late years and have proved very remunerative, being very fine and close in their wool, and shearing up to 15 pounds per fleece. Ten years ago fine wool was greatly in demand, good half-breed Merino selling in Montevideo at 10*d.* to 1*s.* per pound, but this class of wool is not nearly so much in demand now, a longer staple being preferred, and consequently wool has fallen to 5*d.* per pound.

Shearing costs about five farthings a sheep, a ram two-pence, but the farmer has to keep the shearers during the shearing, and find men for catching, tying, and bagging or baling, as the case may be. A fat ewe is worth 2*s.* 6*d.*, and a fat wether about 3*s.* 4*d.* for market; a good average wether weighing about 14 pounds to the quarter.

TREATMENT OF LIQUID SEWAGE IN GREAT BRITAIN.

The first report of the British Association Sewage Committee states that at fifteen places which are sewered wholly or partially the liquid sewage is subjected to treatment either by allowing it to remain for a time in settling tanks, from which the deposit is occasionally removed, as at Burton-on-Trent, Birmingham, Epsom, Fareham, and Andover, or by filtering, as at Uxbridge and Ealing. In eight instances deodorizing materials are added to the sewage: Lime and carbolic acid are used at Carlisle and Harrow; lime alone is used at Leicester; lime and chloride of lime at Luton; perchloride of iron at Cheltenham; perchloride of iron and lime at Northampton; ferruginous clay, treated with sulphuric acid, at Stroud. At Leamington the lime treatment has lately been superseded by a method by which the sewage is clarified and a deposit separated, which is sold as manure. In regard to the effects thus produced, it is stated that at Leicester the sewage runs off as pure as ordinary rain water; at Ealing it is free from smell, colorless, and harmless to vegetable or animal life; at Stroud and Luton the effect is stated to be satisfactory; at Harrow the nuisance is somewhat mitigated, and at Abergavenny the stench is said to be abated by the treatment of the sewage; at Bury St. Edmunds upward filtration, through charcoal and gypsum, has been abandoned as too costly, and in favor of irrigation; at Banbury treatment of the sewage has failed, and irrigation is now resorted to; at Hereford, where it was proposed to be adopted, it has not been tried on the score of expense; at Tunbridge it is about to be tried; and at Hastings and Cambridge experiments are being made. The cost of treatment amounts to £1,200 per annum at Leicester, for a population of 89,000, discharging into the sewers. At Ealing, with a population of 7,500, the annual cost is £300. At Luton, with a population of 18,000, the annual cost is £500; at Cheltenham, with a population of 36,000, it is £350; at Uxbridge, with 7,000 population, it is £200; and at Alton, with 3,000 population, it is £46. The solid deposit obtained by treating liquid sewage is sold at prices varying from 6*d.* to 2*s.* 6*d.* per ton. At Leicester as much as 5,000 tons is produced. At Luton the deposit is mixed with night-soil; at Banbury with street-sweepings; and at Stroud it is made the basis of a manure that is said to be sold at £7 10*s.* per ton.

In only fifteen places out of the ninety-six where the water-carriage system of removing excretal refuse is adopted, either generally or partially, is the sewage applied for irrigating land. Of these places eight are completely sewered; in eleven of them water-closets are general, and in two they are partial. The remaining seven towns are only partially sewered and in three of these towns water-closets are general, while privies are general in the other four towns. At most places the application of the sewage to land has been found to exercise a most beneficial influence on the condition of the streams receiving the drainage of the district. Even where only the solid portion of the sewage is separated by filtration or precipitation, the state of the rivers receiving the discharge is to some extent improved. Generally speaking, no objections appear to have been made to the application of sewage for irrigation; and where such objections have been urged, on the ground that the application was offensive and injurious, they do not appear to have been supported by medical authority. In most cases the application of sewage for irrigation has not been attended with any apparent change in the sanitary condition of the districts, but there is said to be a marked improvement at Braintree. The number of acres irrigated by the sewage

of the fifteen places referred to, with an aggregate population of about 680,000, is about 1,100 acres, of various characters, and situated at distances from the center of the respective towns ranging from one-half mile to three miles, and from the outskirts one-fourth of a mile to one and a fourth mile.

SCIENTIFIC NOTES.

The following recent notes from scientific sources have a practical bearing upon the pursuits of agriculture:

Observations on some peculiarities of the soil of the Landes.—Mr. Faye describes in the *Comptes*, in a lengthy paper, a peculiar subsoil, locally known (in the departements Des Landes and a portion of that of La Gironde) as *allios*. This is a layer of peculiarly agglomerated sand, intermingled with small pebbles, and containing organic matter, as well as oxide of iron. It (the *allios*) is met with at a depth of about one meter below the surface; and above as well as below it (its thickness hardly ever exceeding one to two meters, and generally less) is found the loose sand which, in former years, was constantly blown about by the winds, but is now retained in its place by the plantations of the pinadas, (*Pinus maritima.*) The author ascribes the origin of these *allios* to the fact that, during winter and early spring, these extensive plains (the departements above named are the largest in surface of all the French departements) are inundated by rain water, which, being slowly absorbed by the soil, forms, (at the depth already mentioned,) in consequence of the matter it contains in solution, and by evaporation, a cement which causes the agglomeration of the underlying sandy subsoil. In many parts of the barren moors of the Netherlands and Hanover a similar subsoil occurs, being locally known as *oerbanken;* they often contain the marsh-iron ore in workable quantities.

Fatty matters contained in the chyle of herbivorous animals.—The *Comptes* says: Among other fatty substances discovered by Dr. Dobroslavine, is a mixture of stearic and palmitic acids, oleine, and fat, containing a small quantity of nitrogen.

Experimental researches on the modifications of the immediate composition of bones.—F. Papillon relates in the *Comptes*, at length, some experiments instituted with live animals, to which were given, among their food, phosphate of strontia, phosphate of alumina, and phosphate of magnesia. These experiments were continued for several months, and the animals, (pigeons and rats,) which did not seem to be in the least affected by partaking of the small daily doses of the mineral matters alluded to, were killed, and their bones submitted to analysis, with the following results: Ash of bones of pigeon, in 100 parts: lime, 46.75; strontia, 8.45; phosphoric acid, 41.80; phosphate of magnesia, 1.80; residue, 1.10—total, 99.80. Bones of a rat, in 100 parts: alumina, 6.95; lime, 41.10. Bones of another rat, (to which phosphate of magnesia had been given,) in 100 parts: magnesia, 3.56; lime, 46.15.

Purification of dirty water.—Since, in dry seasons, any water may be of high value, at least for cattle drinking, S. Meunier, in the *Cosmos*, advises to place in a large-sized cask a false bottom, perforated with some holes, and to put on that bottom, first, clean pebbles, next, well washed sand, then a layer of coarsely-granulated charcoal, and, over all this, a piece of canvas. The water, even that accidentally standing in shallow ditches after a shower of rain, may be poured into this filter, and thus become available for cattle drinking, though it may be not quite clear.

New use for hyposulphite of soda.—In the *Cosmos*, S. Meunier states that experiments made with this salt have proved it to be very superior for use for washing linen to the carbonate of soda now in use; it has no corrosive action, and does not cause a yellow coloring of the fabric after some time. Borax, largely used in the Netherlands and Belgium, is a better substitute still, and, by its use, white fabrics assume an agreeable bluish hue, which, in many instances, renders the subsequent use of washing-blue unnecessary.

Composition of rain water.—The *Cosmos* contains an analysis, by Dr. G. Tissandier, of some rain water fallen at Paris on the 1st and 8th of July last. The portion (only some drops purposely collected on watch-glasses) which fell on the first-named date, contained no less than 4.68 per cent. of solid matter; microscopical observation proved the existence therein of debris of woven tissues, threads, coal dust, starch granules, sand, and debris of wood. On being evaporated, a drop, weighing 0.032 gram, and then seen under the microscope, was proved to contain crystals of nitrate of ammonia and crystals of common salt. On the last-named date, a liter of water was collected on the top of a roof in Paris; this water, on being analyzed, yielded a total solid, dry residue of 0.0658 gram, containing insoluable mineral matters, 0.0103 gram; insoluble organic matter, 0.034 gram; soluble salts, 0.021. This rain water was found to con-

tain 0.02 gram of nitrate of ammonia; and, since this salt contains 35 per cent. of nitrogen, it follows that the 10 millimeters of rain-fall of the 8th of July; carried down 70 grams. of nitrogen per hectare, besides the organic matter.

The new system of conveying beet-root juice.—In the *Bulletin de la Société d'Encouragement pour l'Industrie Nationale*, M. A. Payen treats of a contrivance whereby the beet-root juice is pressed from the roots, and carried, by cast-iron pipes, to the beet-root sugar-works. The roots are pulped, and the juice expressed, so to say, on the very spot where the roots are grown; and the juice is conveyed, by pipes laid under ground (as are gas and water pipes) and along the roads, to the beet-root sugar-works, while a portion of these pipes are used in summer time to carry and force up fresh water to the farms.

Madder: its application to dyeing and printing.—In the *Annales du Genie Civil* is given the first portion of a lengthy memoir, by D. Kaeppelin, giving, in the first place, an account of the history of the dispersion of madder from its native soil into Europe, where it was reintroduced from the Levant by the Dutch in the sixteenth century. By order of Charles V it was cultivated in the Alsace, and, since 1789, in the then Comtat d'Avignon, (now departement de Vaucluse.) The author describes, at great length, the mode of cultivation of Marena madder grown in the Derbent, (a portion of Russia, formerly a Persian province.) The soil of that district is a rich alluvial clay, containing a large quantity of calcareous matters and humus. The madder seed is sown in November, and the roots are collected in the fourth following spring, (April.) The roots are first placed in well-aired sheds, and next submitted to a peculiar process of steaming, by being placed in what may be termed tanks dug in the soil, two meters deep and one wide. These tanks are first heated by means of the combustion of wood to such an extent that the sides become red hot. When this is effected the madder roots, previously watered, are thrown upon smoldering embers, and when the hole is filled, covered with coarse woolen cloths, and left in the hot tanks for six hours. The roots are then removed, and next dried in the sun. A great portion of this paper is, by the acknowledgment of its author, who has been in Russia, abstracted from the works of MM. Persoz, Girardin, Schutzenberger, and others.

Composition of sugar cane.—O. Popp has analyzed fresh sugar cane, after pulling the leaves off, with the following results, as stated in the *Zeitschrift fur Chemie von Beilstein:* Martinique and Guadeloupe cane (America) contains, in 100 parts: water, 72.22; cane sugar, all crystallizable, 17.80; glucose, 0.28; cellulose, 9.30; salts, 0.40. African canes: Middle Egypt (Cairo) contains, in 100 parts: water, 72.15; cane sugar, 16.0; glucose, 2.3; cellulose, 9.2; salts, 0.35. Upper Egypt: water, 72.13: cane sugar, 18.1; glucose, 0.25; cellulose, 9.1; salts, 0.42. The author adds, the quantity of sugar above quoted is an averaged quantity, since its percentage may reach as high as 20, while the glucose may be entirely absent, and is so in some kinds of cane, (different species of the plant,) and with good cultivation in all kinds. Sugar cane dried at 100°, previously deprived of its leaves, yielded from 3.8 to 4.3 per cent. of ash. The dried leaves yield by themselves from 8.0 to 8.5 per cent. of ash. The composition of the ash of the American cane, without leaves, is, in 100 parts: potassa, 7.66; soda, 6.45; lime, 12.53; magnesia, 6.61; oxide of iron, 0.56; silica, 43.75; phosphoric acid, 5.45; sulphuric acid, 16.53; chlorine, 0.21—together, 99.75. Ash of the leaves, in 100 parts: potassa, 10.65; soda, 3.26; lime, 8.19; magnesia, 2.45; oxide of iron, 0.85; silica, 65.78; phosphoric acid, 1.25; sulphuric acid, 2.18; chlorine, 1.65; carbonic acid, 3.55—together, 99.81.

ITEMS FROM VARIOUS SOURCES.

THE LUMBER INTEREST OF THE PACIFIC STATES.—It is stated that there are 40 saw-mills on the Pacific slope, requiring an average of 100 men each. Forty ships, 30 brigs, and 60 schooners are engaged in transporting this lumber, and employ about 1,000 men; while 2,000 men are employed in San Francisco in handling the lumber. The annual production is about 150,000,000 feet, worth some $8,000,000.

THE RAMIE.—A stock company has been organized in New Orleans for the extensive culture of the ramie plant and the preparation of the fiber of the same for market.

BEET CULTURE IN CALIFORNIA.—Mr. A. B. Gilbert, one of the number cultivating beets for the Sacramento Beet Sugar Company, has 10 acres of sugar beets on the American River bottom, yielding 25 tons to the acre. The company pay him $5 per ton. The cost of cultivation is

stated to be about $30 per acre. Mr. Gilbert thinks that 40 tons to the acre may be raised in ordinary seasons.

Experiments in beet-sugar making by a new process have lately been made at Sacramento, and the Alta California says:

"There is no difficulty whatever in making sugar from our beets. The percentage of sugar and the cost are, however, left undetermined; until these are proved, the main object of the work is not realized. Something new and unexpected has revealed itself. In Europe the beet attains its maximum of sugar in its latest period of growth before the frost sets in. Here it has lost half its sugar during the last six weeks. The beets taken from the same soil and milled by Wadsworth in December, had the full complement. This is a puzzle which proves the opinion that European experience is not a safe guide in California. Evidently the operator here understands his business, but we must wait another year before we can judge what soil and what cultivation is best for sugar beets. Much light will be thrown on the subject after the more complete sugar works—now about to start at Alvarado—shall give us further revelations."

Tobacco culture in California.—A farmer of Butte County, California, is experimenting successfully with tobacco. He has an acre and a half of the best variety, with a most encouraging promise of a fine yield. He thinks he will gather 2,000 pounds, worth $300.

Italian chestnuts.—Italian chestnuts are doing well in Santa Barbara and in Los Angeles, California. The tree is said to be a rapid grower, hardy, and a prolific bearer. It grows from seed and needs no grafting. One tree three years old has 23 nuts upon it this season.

Wheat in Florida.—Dr. C. C. Collins reports that in January last he planted a grain of wheat in his garden. The plant threw out 17 heads which yielded 538 grains, gathered in May. It was grown on a high ridge of indifferent sandy soil.

Egyptian millet.—The editor of the Florida Land Register has been shown a specimen of this plant grown in a garden at Jacksonville. It measures 11 feet in length, including the seed-head of 10 inches. It was taken from a patch of a few feet square, from seed sown broadcast in fair garden soil, and the crop was nearly all of the same height. This variety of millet, it is said, will bear repeated cutting, throwing out fresh stalks from the root, making upon good land a large quantity of excellent fodder. The seed is nutritious, and cattle, mules, and, particularly, poultry, are very fond of it.

California almonds.—Hon. John Bidwell, of Butte County, California, last month sent to San Francisco three tons of almonds grown upon his rancho. They are of the paper-shell variety and of superior quality, commanding 25 cents per pound in the market. This consignment was only a portion of his crop.

The jute fiber.—Mr. E. H. Derby, of Boston, Massachusetts, writing to the Commissioner in relation to the jute plant, the seed of which the Department has been distributing in the South, says: "If the plant prospers few planters will know how to separate the fiber. This is done in India by steeping the full-grown plant in a pond or stream, when the fiber peels off, leaving the wood, which answers for basket-work." Mr. Derby thinks the plant will grow wherever sugar, rice, and cotton are successful, but will probably do best on the river bottoms of Mississippi.

METEOROLOGY.

[COMPILED IN THE DEPARTMENT OF AGRICULTURE FROM REPORTS MADE BY THE OBSERVERS OF THE SMITHSONIAN INSTITUTION.]

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain-fall (in inches and tenths) for September, 1870, as reported by the observers at the stations named. Observations daily at 7 a. m., and 2 and 9 p. m. Tables from reports received up to October 19; notes from reports received up to October 17.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
MAINE.				°		°	°	*In.*
Houlton	Aroostook	Chas. H. Fernald	19	84	28, 29	43	60.6	4.00
Orono	Penobscot	M. C. Fernald	2	78	21, 29	39	57.8	2.23
Mt. Desert	Hancock	J. D. Parker						3.30
West Waterville	Kennebec	B. F. Wilbur	1	85	29	43	62.2	1.37
Gardiner	do	R. H. Gardiner	1, 4	79	13	45	60.6	1.33
Lisbon	Androscoggin	Asa P. Moore	15	84	13	36	60.5	1.27
Norway	Oxford	Howard D. Smith	15	85	21, 27	40	60.6	1.23
Cornish	York	Silas West	1, 22	82	12	44	61.4	1.31
Cornishville	do	G. W. Guptill	1	84	29, 30	49	63.4	0.90
Averages							60.9	1.88
NEW HAMPSHIRE.								
Stratford	Coos	Branch Brown	2	86	12	35	57.9	1.45
Whitefield	do	L. D. Kidder	2	82	8, 12, 29	37	57.6	0.50
Tamworth	Carroll	Alfred Brewster	1	85	27, 29	34	59.1	1.15
Goffstown Center	Hillsborough	Alfred Colby	1, 2	90	{ 7, 11, { 12, 30	{ 48	64.2	1.71
Averages							59.7	1.20
VERMONT.								
Lunenburg	Essex	H. A. Cutting, A. M	4	80	12	38	60.4	3.00
North Craftsbury	Orleans	Rev. E. P. Wild	2	83	12	30	55.0	2.28
Newport	do	J. M. Currier	2	85	12	36	58.9	2.66
Randolph	Orange	Chas. S. Paine	1, 2	85	12, 13	35	60.3	2.12
Woodstock	Windsor	Doton and Miller	1, 2	84	13	37	57.0	4.93
Near St. Albans	Franklin	A. H. Gilmour	2	79	28	40	59.1	3.10
West Charlotte	Chittenden	Miss M. E. Wing	1	88	12	42	64.7	3.63
Panton	Addison	D. C. and M. E. Barto	2	84	6, 29	46	62.9	3.76
Castleton	Rutland	Rev. R. G. Williams	1, 2	83	12	38	60.4	2.01
Averages							59.9	3.05
MASSACHUSETTS.								
Kingston	Plymouth	G. S. Newcomb	1	87	12	44	63.0	1.25
Topsfield	Essex	S. A. Merriam	1, 4	81	13	40	60.9	0.65
Milton	Norfolk	Rev. A. K. Teele	4	89	12, 13	42	63.6	1.28
Cambridge	Middlesex	Rev. & Mrs. J. B. Perry	1	84	19, 28	51	65.3	.....
North Billerica	do	Rev. E. & W. W. Nason	1	88	12, 13	40	63.9	.....
West Newton	do	Jno. H. Bixby	1	93	12	42	66.3	1.79
Worcester	Worcester	Joseph Draper, M. D	1	81	13	43	61.0	1.40
Mendon	do	Jno. G. Metcalf, M. D	1	83	13, 20	44	62.5	1.60
Lunenburg	do	Geo. A. Cunningham	1	86	12	47	63.8	2.41
Amherst	Hampshire	Prof. E. S. Snell	1	84	12	40	62.3	1.75
Williams College	Berkshire	Prof. A. Hopkins	1	81	12	39	60.6	2.24
Hinsdale	do	Rev. E. Dewhurst			12	46	60.9	.....
Averages							63.0	1.78

Table showing the highest and the lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
RHODE ISLAND.				°		°	°	*In.*
Newport	Newport	W. A. Barber	16	81	13	51	66.8	1.57
CONNECTICUT.								
Columbia	Tolland	Wm. H. Yeomans	23	90	13	42	66.2	1.05
Middletown	Middlesex	Prof. Jno. Johnston	1	89	12	41	64.5	0.96
Southington	Hartford	Luman Andrews	1	84	11, 12	50	64.5	1.16
Colebrook	Litchfield	Charlotte Rockwell	1	87	12	43	62.3	1.55
Brookfield	Fairfield	Rev. S. W. Roe	2	90	12, 13	42	64.6	4.50
Averages							64.4	1.84
NEW YORK.								
Moriches	Suffolk	E. A. Smith & daugh'rs	1	80	12, 22	44	60.3	2.65
South Hartford	Washington	G. M. Ingalsbe	1	88	20	47	66.8	2.15
Caldwell	Warren	A. M. Strong	23	82	12	44	63.0	5.35
Garrison's	Putnam	Thos. B. Arden	3	85	12,13,19	49	63.8	2.55
Throg's Neck	West Chester.	Miss E. Morris	24	83	11, 12, 13, 14	55	68.2	.....
Cooper Union	New York	Prof. O. W. Morris	25	84	12	55	68.9	2.38
Brooklyn	Kings	Isaac P. Mailler	24, 25	84	12	51	67.7	1.70
Flatbush	do	Rev. Eli T. Mack	25	86	12	51	65.9	1.29
Glasco	Ulster	D. B. Hendricks	3	84	12	40	63.6	2.34
Minaville	Montgomery	J. W. Bussing	1	85	12	42	65.6	2.40
Cooperstown	Otsego	G. Pomeroy Keese	2	85	12	35	61.0	2.76
Gouverneur	St. Lawrence	C. H. Russell	2	81	12	37	58.7	4.10
North Hammond	do	C. A. Wooster	1	93	10, 11	54	68.8	3.13
Houseville	Lewis	Walter D. Yale	1	83	11	42	61.1	4.08
Utica	Oneida	J. Gilbert Williams	1	85	12	42	62.8	3.10
South Trenton	do	Storrs Barrows	15	82	13	40	61.6	1.18
Cazenovia	Madison	Prof. Wm. Soule	1	85	12	39	61.1	.....
Oneida	do	S. Spooner, M. D	1	86	12	42	60.5	7.20
Depauville	Jefferson	Henry Haas	1	82	28	46	62.7	4.57
Oswego	Oswego	Wm. S. Malcom	2	79	13	43	61.4	2.28
Palermo	do	E. B. Bartlett	2	86	12	40	61.9	3.75
Waterburg	Tompkins	D. Trowbridge	2	87	11, 13	37	60.2	.....
Nichols	Tioga	Rob't Howell	2	87	20	38	62.3	.....
Newark Valley	do	Rev. Sam'l Johnson	1	88	13	34	61.4	2.20
Himrods	Yates	Gilbert D. Baker	1	84	20	43	62.9	3.19
Rochester	Monroe	H. W. Mathews	9	84	20	47	64.2	5.01
Little Genesee	Alleghany	Dan'l Edwards	1	85	22	37	60.4	3.54
Suspension Bridge	Niagara	W. Martin Jones	8	86	20	46	64.1	3.85
Lockport	do	B. Wheaton Clark	1	82	20	50	63.8	3.75
Buffalo	Erie	Wm. Ives	8	91	12, 19	46	64.7	3.92
Averages							63.3	3.25
NEW JERSEY.								
Paterson	Passaic	Wm. Brooks	3	90	12	47	66.3	2.77
Newark	Essex	W. A. Whitehead	25	83	13	47	65.3	2.80
South Orange	do	Wm. J. Chandler, M.D.	25	86	20, 22	44	65.3	3.07
Trenton	Mercer	E. R. Cook	1, 2, 25	84	12	50	70.3	1.34
Rio Grande	Cape May	Mrs. J. R. Palmer	1	90	20	45	68.6	2.88
Moorestown	Burlington	Thos. J. Beans	2	86	12, 13	52	66.8	1.28
New Germantown	Hunterdon	A. B. Noll	25	87	13	46	65.8	2.08
Readington	do	John Fleming	14	84	13	42	64.8	.....
Haddonfield	Camden	John Boadle	1, 2, 25	82	12, 15	51	65.7	1.92
Greenwich	Cumberland	Miss R. C. Sheppard	3, 25	79	12, 13, 20, 21	52	66.5	2.33
Vineland	do	John Ingram, M. D	1	85	12	49	67.3	2.83
Averages							66.6	2.33
PENNSYLVANIA.								
Nyces	Pike	John Grathwohl	1	83	11, 30	40	60.0	1.20
Hamlinton	Wayne	Jas. D. Stocker	1, 2, 15	84	11, 21	47	63.0	1.47
Dyberry	do	Theodore Day	15	81	20	31	60.4	1.31
Fallsington	Bucks	Ebenezer Hance	25	86	13	48	71.0	1.50
Philadelphia	Philadelphia	Prof. J. A. Kirkpatrick	3	85	12	54	70.1	1.60
Germantown	do	Thos. Mechan	26	89	12	52	68.7	.....
Do	do	Ernest Turner	24	86	12, 20	53	68.7	1.97
Horsham	Montgomery	Miss Anna Spencer	25	86	12, 20	50	66.4	2.92

Table showing the highest and the lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
PENN'A—Con'd.				°		°	°	*In.*
Plymouth Meeting	Montgomery	M. H. Corson	25	86	12, 20	47	66.2	2.19
White Hall	Lehigh	Edw'd Kohler	25	87	12	38	67.1	.....
Factoryville	Luzerne	Rodman Sisson	1	84	12, 20	36	61.1	2.45
Reading	Berks	J. Heyl Raser	25	84	12	48	67.6	2.38
West Chester	Chester	Geo. Martin, M. D.	25	86	20	49	66.5	3.24
Parkersville	do	F. Darlington, M. D.	2	84	12, 13	50	67.8	2.12
Tamaqua	Schuylkill	John Haworth	24	88	20	33	61.5	2.30
Catawissa	Columbia	A. Curtis	25	87	12	38	62.5	.....
Ephrata	Lancaster	W. H. Spera	24	86	13, 14 15, 20	50	67.2	4.48
Carlisle	Cumberland	Wm. H. Cook, M. D.	1, 25	86	12, 13	47	66.3	6.00
Fountain Dale	Adams	S. C. Walker	25	84	12	51	65.7	5.58
Tioga	Tioga	E. T. Bentley	2, 3	86	12	36	63.3	4.40
Lewisburg	Union	Prof. C. S. James	24	81	13	42	63.1	2.57
Grampian Hills	Clearfield	Elisha Fenton	8	84	20	36	60.4	2.78
Johnstown	Cambria	David Peelor	8	80	20	43	63.0	2.82
Franklin	Venango	Rev. M. A. Tolman	8	91	20, 21, 22	45	64.1	2.02
Pittsburg	Allegheny	George Albree	8, 9	84	21	48	66.9	1.10
Greencastle	Franklin	Samuel W. Rhode	25	89	20	47	69.2	6.00
Connellsville	Fayette	John Taylor	9	88	20	48	67.4	.....
Brownsville	do	J. Allen Hubbs, M. D.	9	90	22	48	71.0	.....
New Castle	Lawrence	E. M. McConnell	8, 9	80	22	45	66.2	1.90
Beaver	Beaver	Rev. R. T. Taylor	7	82	20, 21	46	65.3	.....
Canonsburg	Washington	Rev. Wm. Smith, D. D.	8	89	21	41	65.6	2.04
Averages							65.6	2.73
DELAWARE.								
Milford	Kent	Mrs. W. R. Phillips	1	86	20	52	66.9	4.10
Dover	do	J. H. Bateman	25	86	13, 14	55	68.3	3.80
Averages							67.6	3.95
MARYLAND.								
Woodlawn	Cecil	Jas. O. McCormick	2, 24, 25	82	12	49	66.6	3.56
Fallston	Hartford	Geo. G. Curtiss	14	93	12	54	68.2	4.20
Annapolis	A. Arundel	Wm. R. Goodman	2, 25	83	23	55	71.2	1.96
Mt. St. Mary's	do	Prof. C. H. Jourdan	25	83	12	52	65.6	6.61
Averages							67.9	4.08
DIST. COLUMBIA.								
Washington	Washington	Smithsonian Instit'n	2	83	14	51	68.8	1.78
VIRGINIA.								
Johnsontown	Northampton	C. R. Moore	4	85	12	56	71.0	1.05
Hampton	Elizab'th City	Jas. M. Sherman	3, 25	86	10	56	71.7	3.70
Surry C. H.	Surry	B. W. Jones	3, 4, 25, 26	91	12	53	73.1	1.68
Comorn	King George	E. T. Tayloe	2	86	21	54	71.3	1.25
Vienna	Fairfax	H. C. Williams	7	78	11	58	69.7	2.20
Piedmont	Fauquier	Franklin Williams	24	88	13	52	67.2	10.40
Piedmont Station	do	Wm. A. Martin	25	86	20, 23	50	66.9	9.55
Markham Station	do	L. E. Payne	25	86	30	50	65.5	12.83
Staunton	Augusta	Prof. J. C. Covell	2, 7	78	20	47	64.3	11.24
Lynchburg	Bedford	Chas. I. Meriwether	26	82	20, 21	53	69.8	9.25
Near Wytheville	Wythe	Rev. Jas. A. Brown	7	80	20, 21	45	64.2	1.30
Averages							68.6	5.86
WEST VIRGINIA.								
Romney	Hampshire	W. H. McDowell	2, 25	90	20	48	69.9	.....
Weston	Lewis	B. Owen	8	86	20, 21	38	64.9	.....

Table showing the highest and the lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
NORTH CAROLINA.				°		°	°	*In.*
Goldsboro	Wayne	E. W. Adams, A. M.	26	96	10, 12	64	76.3	2.85
Warrenton	Warren	H. A. Foote	26	79	13, 20, 23	60	69.3	1.60
Oxford	Granville	W. R. Hicks, M. D	25, 26	84	12, 20	55	69.8	1.35
Albemarle	Stanley	F. J. Kron	2	92	8	52	70.4	1.14
Statesville	Iredell	Thos. A. Alison	26	82	24	50	.....	4.25
Asheville	Buncombe	E. J. Aston	27	77	21	48	64.4	2.50
Do	do	J. T. E. Hardy, M. D.	1, 3	74	22	48	63.4	.....
Raleigh	Wake	R. H. Battle	4	83	7, 20	54	68.5	.....
Averages							68.9	2.28
SOUTH CAROLINA.								
Aiken	Barnwell	Jno. H. Cornish	25	87	22	63	.....	0.83
Gowdeysville	Union	Charles Petty	25, 26	86	24, 25	63	73.1	2.05
GEORGIA.								
Berne	Camden	H. L. Hillyer	4	91	20	64	72.4	5.00
St. Mary's	do	Ebenezer Barker	4	92	19	69	77.0	.....
Penfield	Greene	J. P. Sanford	26	87	20,22,24	62	71.9	2.25
Averages							73.8	3.63
ALABAMA.								
Rockville	Jefferson	Miss Ella B. Shields	6	86	13	62	76.5	3.43
Carlowville	Dallas	H. L. Alison	5	90	13	64	75.2	2.97
Fish River	Baldwin	W. J. Van Kirk	6, 26	90	30	60	74.6	2.70
Averages							75.4	3.03
FLORIDA.								
Near Port Orange	Volusia	S. M. Chamberlain	3	86	23	68	77.6	11.88
St. Augustine	St. John's	George W. Atwood	1, 3	90	21, 22	70	78.4	7.00
Jacksonville	Duvall	A. S. Baldwin, M. D	1, 2	93	22	71	77.2	9.35
Pilatka	Putnam	Gen. G. D. Robinson	3	96	19	68	79.4	11.04
Ocala	Marion	Edward Barker	5, 19	96	20	68	81.0	.....
Orange Grove	Manatee	W. J. Clarke	2, 3, 4, 5, 6	90	24, 27	74	80.7	6.57
Newport	Wakulla	Charles Beecher	5	89	19, 21, 22	68	76.0	7.02
Chattahoochie	Gadsden	Malachi Martin	10	90	20	69	79.0	2.90
Averages							78.7	7.97
TEXAS.								
Clarksville	Red River	Rev. J. M. Anderson	7, 19	87	30	65	79.0	.....
Gilmer	Upshur	J. M. Glasco	22	98	30	62	78.8	1.62
Galveston	Galveston	George N. Leoni	15	94	30	65	82.0	.....
Averages							79.9	1.62
LOUISIANA.								
New Orleans	Orleans	Robt. W. Foster	7, 25	88	30	64	77.0	1.30
Shreveport	Bossiere	J. H. Carter	5, 7, 8	89	28, 30	66	78.1	.....
MISSISSIPPI.								
Columbus	Lowndes	James S. Lull	4	87	21, 30	64	74.4	2.04
Philadelphia	Neshoba	L. A. Bowden	6, 7	88	24, 25, 29, 30	64	74.7	2.40
Grenada	Grenada	John S. Payne	26	92	24	58	73.5	4.25
Near Brookhaven	Lawrence	Mrs. W. E. A. Keenan	5, 6	90	24	61	72.8	3.90
Holly Springs	Marshall	Thomas B. Coleman	6	94	25	67	71.0	2.90
Averages							73.3	3.10

Table showing the highest and the lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
ARKANSAS.				°		°	°	*In.*
Helena	Phillips	O. F. Russell	6	96	28	59	76.6	.....
Mineral Spring	Hempstead	Harmon Bishop	5, 6, 7	88	30	58	74.1	4.19
Averages							75.4	4.19
TENNESSEE.								
Elizabethton	Carter	Chas. H. Lewis	1	88	20,21,22	52	69.2	2.10
Lookout Mountain	Hamilton	Rev. C. F. P. Bancroft	10	81	21	61	70.3	.....
Clearmont	Warren	T. P. Wright	6, 8, 26	81	19, 24	60	64.3	.....
Austin	Wilson	P. B. Calhoun	8	85	4, 30	60	70.5	3.52
Trenton	Gibson	W. T. Grigsby	7	94	29	57	73.3	1.70
La Grange	Fayette	W. E. Franklin, M. D.	7	92	19	62	74.4	1.90
Averages							70.3	2.31
KENTUCKY.								
Pine Grove	Clarke	S. D. Martin, M. D.	8	86	20	58	69.7	3.61
Danville	Boyle	O. Beatty	8	90	6, 20, 21	62	72.8	3.50
Shelby City	do	Howard Shriver	7	85	20	56	70.4	3.35
Near Louisville	Jefferson	Mrs. L. Young	7	92	5, 20, 21	51	72.0	2.38
Averages							71.2	3.21
OHIO.								
Salem	Columbiana	J. E. Pollock	2	87	20	48	65.8	2.75
Steubenville	Jefferson	Joseph B. Doyle	8	84	20, 21	49	68.8	2.73
Painesville	Lake	E. J. Ferris	8	82	12	50	65.4	4.56
Milnersville	Guernsey	Rev. D. Thompson	8, 9	87	19	48	66.8	3.00
Cleveland	Cuyahoga	Mr. & Mrs. G. A. Hyde	1, 8	82	20	50	64.7	4.76
Wooster	Wayne	Martin Winger	8	96	22	46	69.7	.....
Adams' Mills	Muskingum	Charles A. Stilwell	8	89	22	46	67.7	1.73
Pennsville	Morgan	T. J. Bingman	8	90	12	48	66.9	0.65
Gallipolis	Gallia	A. P. Rogers	8	88	21	48	70.3	1.43
Oberlin	Lorain	S. Herrick	1, 7, 8	88	13	46	65.6	2.55
Kelley's Island	Erie	Geo. C. Huntington	1	86	11,12,20	62	70.5	1.50
Sandusky	do	Thomas Neill	1	87	20	51	64.7	1.83
Carson	Huron	Mrs. M. M. Marsh	1	89	12	50	68.3	2.40
North Fairfield	do	O. Burrass	8	90	5, 11, 12	55	69.0	1.42
Gambier	Knox	Frank Compton	16, 24	80	21, 22	46	64.8	2.74
Westerville	Franklin	Prof. John Haywood	8, 9	91	20	51	68.5	1.37
North Bass Island	Ottawa	Geo. R. Morton, M. D.	1	92	3, 4	61	70.4	1.53
Marion	Marion	H. A. True, M. D	8	88	12, 20	49	66.3	1.10
Hillsboro'	Highland	J. McD. Mathews, M.D.	8	84	12	53	67.8	0.69
Bowling Green	Wood	John Clarke	8	95	19	46	69.7	2.85
Kenton	Hardin	C. H. Smith, M. D.	9	95	29	58	71.9	7.65
Bellefontaine	Logan	Wm. Barringer	8	90	3	52	68.0	1.50
Urbana University	Champaign	Prof. M. G. Williams	8	92	5, 21	54	69.0	0.47
Carthagena	Mercer	Prof. W. R. Mueller	7, 8	88	12	54	70.8	1.80
Jacksonburg	Butler	I. B. Owsley, M. D.	7, 8	90	18	56	71.4	1.39
Mt. Auburn Inst	Hamilton	Prof. I. H. White	8	87	12	57	72.0	0.49
Cincinnati	do	G. W. Harper	8	95	12	57	72.0	0.30
Do	do	R. C. Phillips	7	88	21	59	72.6	0.70
College Hill	do	John W. Hammitt	8	96	19, 20	59	72.6	0.15
Averages							68.7	2.00
MICHIGAN.								
Detroit	Wayne	F. W. Higgins	8	92	4, 13, 20, 21	53	67.3	1.71
Monroe City	Monroe	Miss H. I. Whelpley	1, 8	88	4, 11, 12, 20	58	71.2	2.26
Ann Arbor	Washtenaw	Mrs. N. H. Winchell	8	89	5, 12	51	64.8	2.42
Alpena	Alpena	J. W. Paxton	8	74	3, 11, 16, 17	52	61.9	2.97
Litchfield	Hinsdale	R. Bullard	7	87	12	49	64.9	4.20
Coldwater	Branch	N. L. Southworth	8	89	12	44	65.4	1.87
Grand Rapids	Kent	E. S. Holmes, D. D. S.	7	89	12	49	67.6	2.77
Northport	Lelanaw	Rev. Geo. N. Smith	7	82	2, 3	50	62.7	2.75
Otsego	Allegan	Milton Chase, M. D	6, 7	100	20	41	67.6	.....

Table showing the highest and the lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
MICHIGAN—Cont'd.				°		°	°	*In.*
Copper Falls	Keweenaw	S. H. Whittlesey, M. D	7	76	2	44	57.4	1.05
Ontonagon	Ontonagon	Edwin Ellis, M. D	21	78	26, 27, 28	50	61.7	.....
Averages							64.8	2.44
INDIANA.								
Vevay	Switzerland	Chas. G. Boerner	8	90	20	53	71.4	1.20
Mt. Carmel	Franklin	J. A. Applegate and daughters.	7	91	12, 19	58	70.8	2.20
Laconia	Harrison	Adam Crozier	8	87	21	57	70.1	2.33
Knightstown	Rush	D. Deem	8	91	21	50	69.7	1.37
Indianapolis	Marion	Dr. Hadley and R. D. Craighead.	8	88	21	51	68.0	1.09
Near La Porte	La Porte	F. J. Andrew	8	91	4	54	68.1	2.75
Rensselaer	Jasper	J. H. Loughridge	23	87	12	50	69.3	2.10
Merom	Sullivan	Thomas Holmes	7	99	4, 19, 25, 26	60	70.7	0.58
New Harmony	Posey	John Chappellsmith	7, 8	86	30	57	70.5	2.00
Haweysburg	Fountain	B. C. Williams, M. D	7	84	28	54	67.0	4.30
Averages							69.6	1.99
ILLINOIS.								
Chicago	Cook	J. G. Langguth, jr	7, 8	90	4	57	70.3	2.82
Near Chicago	do	Sam'l Brookes	8	90	2, 22	58	65.8	.....
Evanston	do	Prof. Oliver Marcy	8, 29	86	4	57	67.0	3.34
Marengo	McHenry	J. W. James	7	87	4	47	64.7	5.36
Charleston	Coles	Charles Gramesley	7, 8	88	5	52	68.2	0.66
Mattoon	do	W. E. Henry	7, 8	86	9	52	69.7	1.44
Aurora	Kane	A. Spaulding, M. D	7, 8	86	18, 19	54	66.3	3.63
Louisville	Clay	D. H. Chase, M. D	7, 8	92	3, 4, 5, 12, 19, 20, 21, 23, 24, 30	60	69.2	1.30
Golconda	Pope	Wm. V. Eldredge	10	95	22	50	72.8	1.60
Belvidere	Boone	G. B. Moss	7	91	18, 19	52	65.7	4.06
Decatur	Macon	Timothy Dudley	7	89	5	54	68.7	2.60
Winnebago	Winnebago	J. W. and Miss Tolman	7	86	12	51	65.2	3.92
Wyanet	Bureau	E. S. and Miss I. G. Phelps.	7	89	19	47	67.2	6.69
Hennepin	Putnam	Ethan Osburn	7	89	12, 19	54	68.3	3.10
Peoria	Peoria	Fred'k Brendel	7	91	19	56	70.3	3.56
Havana	Mason	Jos. Cochrane	7	90	19	53	67.0	3.36
Dubois	Washington	Wm. C. Spencer	7	92	29	58	72.3	2.32
Galesburg	Knox	Prof. Wm. Livingston.	7	84	19	56	66.7	3.96
Manchester	Scott	Dr. J. and C. W. Grant	21, 22	90	4	56	69.8	2.61
Mt. Sterling	Brown	Rev. A. Duncan	8	83	4, 19	58	69.1	4.37
Andalusia	Rock Island	Dr. E. H. Bowman	7	84	19	50	68.1	.....
Augusta	Hancock	S. B. Mead, M. D	7	85	19, 25	54	67.8	5.78
Warsaw	do	B. Whitaker	6, 7	90	19	55	67.9	4.12
Averages							68.2	3.35
WISCONSIN.								
Sturgeon Bay	Dove	Rufus M. Wright	7	86	2, 3, 11, 17, 18, 26	51	64.0	3.05
Manitowoc	Manitowoc	Jacob Lüps	8	81	20	50	63.3	3.13
Milwaukee	Milwaukee	I. A. Lapham, LL.D	7	87	5	47	64.1	2.10
Geneva	Walworth	W. H. Whiting	7	92	5	51	65.1	3.11
Waupacca	Waupacca	H. C. Mead	7	88	12, 13, 19, 20	50	63.4	.....
Embarrass	do	E. Everett Breed	7	81	12	46	61.8	3.35
Rocky Run	Columbia	W. W. Curtis	7	84	12	50	64.7	2.50
Madison	Dane	W. W. Daniels	7	83	5	54	61.2	4.00
Edgerton	Rock	H. J. Shints	7	88	4, 19	50	67.7	7.10
Mosinee	Marathon	Jno. O'Donoghue	11	79	4	43	60.1	10.20
Baraboo	Sauk	M. C. Waite	7	88	20	49	64.2	1.69

Table showing the highest and the lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
WISCONSIN—Cont'd.				°		°	°	*In.*
Tunnel City	Monroe	Rev. Geo. Pegler	29	92	11, 28	48	64.3	2.20
Bayfield	Bayfield	Andrew Tate	9	78	1	48	61.9	.....
Averages							63.5	3.86
MINNESOTA.								
Minneapolis	Hennepin	Wm. Cheney	21	82	2, 23, 25, 26, 30	50	63.5	4.07
Sibley	Sibley	C. W. & C. E. Woodbury	15, 21	80	2	43	64.1	1.55
Koniska	McLeod	Thomas Young	10, 12, 19, 21, 29	76	20	46	60.2	2.50
Litchfield	Meeker	H. L. Wadsworth	10	82	26, 29, 30	50	63.8	5.00
New Ulm	Brown	Charles Roos	15	81	25	46	65.8	2.01
Madelia	Watonwan	W. W. Murphy	15, 27	85	24, 25	50	67.0	4.15
Averages							64.1	3.21
IOWA.								
Clinton	Clinton	Dr. J. P. Farnsworth	7	85	4	56	67.9	2.65
Dubuque	Dubuque	Asa Horr, M. D.	7	88	19	51	65.9	3.98
Monticello	Jones	Rufus P. Smith	7	90	18	50	67.7	3.95
Bowen's Prairie	....do	Sam'l Woodworth	6, 7	82	11	54	65.2	2.33
Ft. Madison	Lee	Dan'l McCready	8	87	19	51	67.4	4.52
Guttenberg	Clayton	Jas. P. Dickerson	7	87	19	49	64.6	.....
Mt. Vernon	Linn	Prof. A. Collins	7	83	11	52	64.9	.....
Iowa City	Johnson	Prof. Theo. S. Parvin	7	90	4, 5, 9, 18	56	67.8	6.67
Independence	Buchanan	Geo. Warne, M. D.	7	88	19	54	65.9	5.65
Near Independence	....do	Mrs. D. B. Wheaton	7	86	12, 19	57	66.1	5.26
Rockford	Floyd	H. Wadey	7	82	4	52	63.7	.....
Iowa Falls	Hardin	N. Townsend	7	84	1, 2	56	69.2	9.33
Algona	Kossuth	James H. Warren	6, 15	84	2	50	63.0	.....
Webster City	Hamilton	Clayton I. Croft	10	90	28	47	64.0	8.04
Boonesboro	Boone	E. Babcock	6	84	2	47	63.6	12.08
Fontanelle	Adair	A. F. Bryant	5	87	2	51	65.4	11.75
Grant City	Sac	Mr. and Mrs. Miller	6, 7	86	2	48	65.3	7.11
Sac City	....do	D. B. Nelson	20	84	24	52	63.5	4.60
Logan	Harrison	Jacob T. Stern	6	84	2, 4	48	62.2	9.90
Woodbine	....do	David R. Witter	.....	.....	.....	.....	.....	7.00
West Union	Fayette	Frank McClintock	30	87	13, 19	54	66.9	5.16
Averages							65.5	6.47
MISSOURI.								
St. Louis University	St. Louis	Rev. F. H. Stuntebeck	6, 7	89	25, 30	58	71.8	1.08
Allenton	....do	A. Fendler, M. D.	7	97	25	52	68.8	0.99
Hematite	Jefferson	Jno. M. Smith	7	94	25	52	71.2	1.37
Hannibal	Marion	Frank J. Hearne	6, 7	88	25	54	68.6	7.30
Rolla	Phelps	Homer Ruggles	6	91	25	53	70.3	2.33
Jefferson City	Cole	Nicolas de Wyl	1	91	25	52	.....	.....
Kansas City	Jackson	Sam'l W. Salisbury	6	84	4	55	68.2	3.25
Harrisonville	Cass	John Christian	6	88	27, 28	54	68.2	4.11
Oregon	Holt	Wm. Kaucher	6	91	4	54	67.9	4.20
Corning	....do	Horace Martin	7	88	24, 30	54	68.1	4.73
Averages							69.2	3.26
KANSAS.								
Atchison	Atchison	Dr. H. B. & Miss Horn	6	88	4	56	68.3	4.20
Williamstown	Jefferson	John M. Cotton	6	90	4, 23	54	69.0	4.09
Leavenworth	Leavenworth	Dr. J. Stayman	7	88	24, 27	52	67.6	4.60
Paola	Miami	L. D. Walrad	6	89	27	52	68.4	2.69
Baxter Springs	Cherokee	Ingraham & Hiland	6	92	24, 30	60	74.4	4.70
Lawrence	Douglas	Prof. F. H. Snow	6	89	24, 25, 28	55	67.9	2.82
Holton	Jackson	James Watters, M. D.	6, 7	92	25	51	67.8	5.00
State Agr. College	Riley	Prof. B. F. Mudge	6	92	24	52	68.3	4.57
Council Grove	Morris	A. Woodworth, M. D.	6	90	23, 24	54	69.4	7.50

Table showing the highest and the lowest range of the thermometer, &c.—Continued.

State and station.	County.	Observer.	Date.	Maximum temperature.	Date.	Minimum temperature.	Mean temperature.	Rain-fall.
KANSAS—Cont'd.				°		°	°	*In.*
Douglass	Butler	W. M. Lamb, M. D	5, 6	90	23	52	68. 3	4. 03
Averages							68. 9	4. 42
NEBRASKA.								
Omaha Agency	Oma. Reserve.	Rev. Wm. Hamilton	6	91	4	50	67. 3	4. 46
De Soto	Washington	Charles Seltz	6	89	24	49	63. 6	6. 79
Bellevue	Sarpy	Mrs. E. E. Caldwell	7	89	3, 4	53	66. 3	6. 69
Nebraska City	Otoe	Prof. P. Zahner	6	92	4	51	65. 9	7. 10
New Castle	Dixon	Louis H. Smith	20	87	24	43	62. 7	11. 50
Averages							65. 2	7. 29
UTAH TERRITORY.								
Coalville	Summit	Thomas Bullock	3	85	26	34	58. 2	.....
CALIFORNIA.								
Monterey	Monterey	C. A. Canfield, M. D	21, 22	80	19	48	63. 2	0. 00
Chico	Butte	W. Fitch Cheney	21, 22	96	23	54	72. 7	0. 00
Cahto	Mendocino	A. W. Thornton, M. D	1, 2	95	25	51	66. 5	0. 20
Averages							67. 5	0. 07
MONTANA TER.								
Deer Lodge City	Deer Lodge	Granville Stuart	9, 11	84	7, 22	26	52. 3	1. 62
WASHINGTON TER.								
Cathlamet	Wahkiakum	Charles McCall	1	88	21	39	59. 2	.....
COLORADO TER.								
Denver	Arapahoe	Byers & Sopris	4	89	22, 24, 26	40	60. 1	2. 85
OREGON.								
Eola	Polk	Thomas Pearce	2	85	24	45	59. 3	0. 71
Astoria	Clatsop	Lewis Wilson	22	76	20	51	58. 7	3. 04
Averages							59. 0	1. 83

STATE AVERAGES FOR SEPTEMBER, 1870.

Table of the maximum and minimum temperatures (with dates prefixed) in the several States, &c., named, with the average mean temperature and rain-fall in each, for the month of September, 1870.

States.	Date.	Maximum temperature.	Date.	Minimum temperature.	Average mean temperature.	Average rain-fall.
		°		°	°	*In.*
Maine	1. 15	85	13	36	60. 9	1. 88
New Hampshire	1, 2	90	27, 29	34	59. 7	1. 20
Vermont	1	88	12	30	59. 9	3. 05
Massachusetts	1	93	12	39	63. 0	1. 78
Connecticut	2, 23	90	12	41	64. 4	1. 84
New York	1	93	13	34	63. 3	3. 25
New Jersey	1, 3	90	13	42	66. 6	2. 33
Pennsylvania	8	91	20	31	65. 6	2. 73
Maryland	14	93	12	49	67. 9	4. 08
District of Columbia	2	83	14	51	68. 8	1. 78
Virginia	3, 4, 25, 26	91	20, 21	45	68. 6	5. 86
North Carolina	26	96	21, 22	48	68. 9	2. 28
Georgia	4	92	20, 22, 24	62	73. 8	3. 63
Alabama	5, 6, 26	90	30	60	75. 4	3. 03
Florida	3, 5, 19	96	19, 20, 21, 22, 23	68	78. 7	7. 97
Texas	22	98	30	62	79. 9	1. 62
Mississippi	6	94	24	58	73. 3	3. 10
Tennessee	7	94	20, 21, 22	52	70. 3	2. 31
Kentucky	7	92	5, 20, 21	51	71. 2	3. 21
Ohio	8	96	13, 19 21, 22	46	68. 7	2. 00
Michigan	6, 7	100	20	41	64. 8	2. 44
Indiana	7	99	12, 21	50	69. 6	1. 99
Illinois	10	95	4, 19	47	68. 2	3. 36
Wisconsin	7, 29	92	4	43	63. 5	3. 86
Minnesota	15, 27	85	2	43	64. 1	3. 21
Iowa	7, 10	90	2, 28	47	65. 5	6. 47
Missouri	7	97	25	52	69. 2	3. 26
Kansas	6, 7	92	25	51	68. 9	4. 42
Nebraska	6	92	24	43	65. 2	7, 29
California	21, 22	96	19	48	67. 5	0. 07

NOTES OF THE WEATHER—SEPTEMBER, 1870.

N. B.—Want of room compels the omission of many notices of the auroral displays during the month. We give a few to show the varied grandeur and beauty exhibited (where not too cloudy) all over the Northern States, and, on the 24th and 25th, all over the Union.

Houlton, Me.—Violent rain 8th, with wind 4th; brilliant pink aurora 18th; heavy frost 21st.

Orono, Me.—Frosts on lowlands 12th, and uplands 13th; brilliant auroras 25th, 26th.

West Waterville, Me.—First frosts, slight, 12th, 13th; springs nearly all dry.

Gardiner, Me.—Auroras 20th, 22d, bright 18th, brilliant 25th, 26th. September, like August, warm and dry; mean heat 1.77° above average of thirty-four Septembers.

Lisbon, Me.—River lower than since 1819—an old settler says 1816.

Norway, Me.—Severe frosts 12th, 13th; auroras 22d, 25th, 26th, green and white rays 23d, red and white 24th. Driest time ever known here.

Cornish, Me.—Auroras 18th, all night 24th, 25th, and 26th, brilliant 20th. Average September heat for 40 years, 56.16°; in 1834, 64°; this, 63.37°.

Whitefield, N. H.—Frosts 7th, 11th, severe 12th. Great drought to 30th.

Tamworth, N. H.—Frost, ice, 13th; auroras 18th, 20th, 25th, 26th; the sky a tent of brilliant flames and streamers uniting overhead, 24th.

Lunenburg, Vt.—Aurora every fair evening; very bright 24th, 25th. Month dry, but vegetation yet green.

North Craftsbury, Vt.—First killing frost 12th. A warm, dry September.

Woodstock, Vt.—Slight frosts 6th, 12th, 13th; auroras 24th, 25th, 28th. Rains have not yet swelled the low springs and streams.

West Charlotte, Vt.—Auroras 6th, 19th, 21st, 26th; brilliant white and rosy columns and streamers 25th; first copious rain since April 30th.

Panton, Vt.—Auroras 6th, 7th, 8th, 11th, 22d, 26th; brilliant 18th, and with red streamers 21st; first frost 12th.

Topsfield, Mass.—Frosts 7th, 11th, 12th, 20th; brilliant aurora 25th.

North Billerica, Mass.—Wells and streams never lower; heavy rain 30th.

Mendon, Mass.—Rain, ended severest drought in forty-four years, 30th.

Williamstown, Mass.—Slight frosts 11th, 20th; brilliant aurora 24th.

Middletown, Conn.—Frost 12th; auroras (cloudy) 24th and 25th; brilliant 26th.

Southington, Conn.—Frosts 12th, 13th; auroras 18th, bright a. m. 27th. Dry June, July, and August; in 1854, 25.46 inches rain; 1855, 17.81 inches; 1864, 16.69 inches; 1865, 21.72 inches; this year 15.18 inches.

Brookfield, Conn.—Frosts, slight 12th, light 13th; splendid aurora, 24th.

Moriches, N. Y.—First frosts, slight, 12th, 13th; auroras, brilliant, with streamers 18th, 20th, and 25th, diffused 26th and 28th.

Caldwell, N. Y.—First frost, light 12th. Lake George lower than ever known.

New York City.—Auroras 20th, very bright 23d, 24th, 25th, 26th, 27th.

Brooklyn, N. Y.—Blessed rain 30th. Stars visible 22 nights this month.

Cooperstown, N. Y.—Slight frosts 12th, 13th, 20th. Surface rains, springs low.

North Hammond, N. Y.—Bright auroras 17th, 25th. No sharp frosts.

Houseville, N. Y.—First frosts, slight, 12th, 13th; auroras, brilliant streamers, 18th, 20th, 25th, diffused 26th, 28th.

Utica, N. Y.—Slight frosts 11th, 12th, 13th; auroras 17th, 19th, 20th, 26th; beautiful 18th, (cloudy) 24th, magnificent columns 25th.

South Trenton, N. Y.—Frosts 11th, 12th; beautiful month for farmers.

Cazenovia, N. Y.—Frosts 11th, 12th, 13th, 19th, 20th; bright auroras 25th.

Waterbury, N. Y.—Many spots seen on sun with naked eye about the 25th.

Nichols, N. Y.—Greatest rain in three months; 30th, river lower than ever.

Newark Valley, N. Y.—Dry month, streams and wells failing.

Buffalo, N. Y.—Isabella grape ripe eighty-five days from blossom, 12th. Month 2.5° warmer than its average for twelve years.

Newark, N. J.—Brilliant aurora 24th. Month pleasant, dry, and 1.36° warmer than the average of twenty-seven Septembers. In 1846 the mean was 68.64°.

Greenwich, N. J.—Cutting up corn 7th. First good rain in five weeks, 17th.

New Germantown, N. J.—Frost seen 12th. Welcome rain 30th.

Nyces, Pa.—Ground baked, cannot be plowed; nine out of ten wells dry.

Dyberry, Pa.—Frosts 11th, 12th, 13th. Delaware and Hudson Canals too low for boating since 12th. Past three months hot, dry and clear.

Horsham, Pa.—First frost, slight, 12th. Dry month to 30th.

Plymouth Meeting, Pa.—First frost, (ice in low grounds,) 12th, slight, 13th, 20th. Driest and warmest September in six years.

Factoryville, Pa.—Frosts, slight 11th, sharper 12th, 13th, 20th.

Westchester, Pa.—Auroras 26th, beautiful crimson, reaching southeast horizon and far south of zenith; all night 24th; another all night 25th.

Tamaqua, Pa.—Slight rains 17th, 18th; dry and hot till 29th.

Ephrata, Pa.—Frost on low grounds 11th, 12th, 13th; auroras 20th, 23d, to 27th.

Carlisle, Pa.—Cutting corn, sowing wheat, 7th; dust deep 28th.

Tioga, Pa.—Beautiful month, no frost; rather dry uplands.

Grampian Hills, Pa.—Seeding 4th; frosts slight 12th, 13th; bit vines 20th.

Brownsville, Pa.—Month dry till 27th; fine for farmers.

Woodlawn, Md.—Frost on low grounds 12th; auroras 18th, 23d to 27th.

Fallstoy, Md.—Brilliant aurora, nearly a dome of light, pinkish red, 24th. Very dry till 27th; streams, springs, &c., very low.

Mount Saint Mary's, Md.—No rain from 4th to shower on 18th; heavy rain (5.4 inches) 29th, 30th; beautiful aurora 24th.

Johnsontown, Va.—Rains few and slight since July 8th; the third drought in succession.

Hampton, Va.—Drought till 17th; frequent meteors 25th, 26th.

Surry, Va.—Bright aurora 24th; heavy rain 30th. No frost yet.

Vienna, Va.—First frost 12th.—B. Auroras, red rays 24th, brilliant white and red 25th.—W.

Piedmont, Va.—Heavy rain, 6.2 inches, 28th, 29th, 30th. Shenandoah higher than in fifty years; great loss of life and property.—M. Greatest rain known here; two families drowned; river 15 feet above highest

mark.—W. (At Harper's Ferry many houses swept away, and forty-three lives lost.)

Lynchburg, Va.—Great freshet; 8.5 inches fell on 28th, 29th, 30th.

Wytheville, Va.—First frost 21st. A very dry month till 28th.

Markham Station, Va.—Beautiful aurora, many-colored, changing, ending in festoons of rosy light, northwest and northeast, 24th.

Goldsboro, N. C.—Bright aurora till midnight, part time very red, 24th.

Albemarle, N. C.—Bright aurora, red and white, from east to west and to zenith, no arch nor corona, 24th; long drought ended by mist 30th; river rising.

Gowdeysville, S. C.—Cotton picking 8th; aurora nearly all night 24th; summer and this month of very uniform temperature.

Penfield, Ga.—Auroras, arch of light at 2 a. m., 24th; greenish white arch at 8 p. m. 24th; red sky at 11 p. m., then seven orange streamers extending 20° above the pole-star, passed away to the northwest. The arch continued till 2 a. m. 25th—a magnificent display.

Carlowville, Ala.—Aurora 24th, and till daylight 25th.

Fish River, Ala.—Fine aurora 9 to 10 p. m. 24th; three beams met in zenith, changing from white to red; another a. m. 25th.

Jacksonville, Fla.—Rain two inches above September average. Brilliant aurora seen in various places in this State on 24th.

Pilatka, Fla.—Equinoctial storm, without high wind.

Clarksville, Tex.—Singular aurora at 8.30 to 10 p. m. 24th, and 12.30 to 1.45 a. m. 25th, from north-northeast to north-northwest, rising 40°, bright yellow, paling toward the zenith. No change in the barometer before or after.

New Orleans, La.—Cutting third crop of hay 14th.

Shreveport, La.—Beautiful aurora 9 to 9.30 p. m. 24th.

Brookhaven, Miss.—Month very dry; swallows, &c., have left us.

Helena, Ark.—Brilliant and beautiful aurora 24th.

Lookout Mountain, Tenn.—Remarkable aurora, red, white, yellow, green, blue, 24th; auroral glow a. m. 25th.

Clearmont, Tenn.—Red and white aurora, reaching to zenith, 24th.

Austin, Tenn.—Bright aurora 17th, continued till 18th, and extended over more than half the horizon.

Pine Grove, Ky.—Bright aurora a. m., red streamers p. m., 24th, and still visible p. m. 25th.

Shelbyville, Ky.—Auroras 20th, 24th, 25th. An agreeable month.

Wooster, Ohio.—Auroras 18th, 20th, 23d, 24th, 25th, 26th.

Adams's Mills, Ohio.—Auroras 24th, 25th, 26th, and one promising great beauty and extent, but obscured by clouds, 30th.

Westerville, Ohio—Fine aurora, streamers, bands, and patches, covered nearly the whole sky 24th. The night was cloudy.

Urbana, Ohio.—Temperature of the month 4° above average of eighteen years.

Cincinnati, Ohio.—Magnificent aurora, gorgeous colors—white, red, pink, bordering on lilac—streamers flashing to zenith, 24th.

Ann Arbor, Mich.—Grass drying up, wheat germinating poorly.

Alpena, Mich.—Auroras 3d, 4th, 12th, 16th, bright 17th, 26th, very bright 18th, 24th, 25th. No frost yet on the island.

Litchfield, Mich.—Slight frosts 12th, 13th, 14th; auroras 26th, 27th, brilliant red, white and blue streamers from all points centered south of zenith, 24th.

Northport, Mich.—Month very pleasant; began wet and warm.

Copper Falls, Mich.—Auroras frequent, on 25th brilliant, with many streamers to zenith; on 26th with floating white clouds beyond zenith.

Ontonagon, Mich.—Brilliant aurora 25th, red and white rays streamed from bright arch to zenith. No frost since April.

Vevay, Ind.—The Ohio very low, delaying travel and mails.

Knightstown, Ind.—Ground plowed last spring not yet settled by rains.

La Porte, Ind.—Grand aurora 24th, red light west and east, rosy spot at zenith emitted white and green rays in all directions, and waves of light flashed over large bands in the north.

Chicago, Ill.—Splendid aurora 24th to 25th, streamers bright red, and once the whole sky was a bright haze.

Marengo, Ill.—Auroras, bright 3d and 25th, brilliant 24th, streamers playing with great velocity, corona south of zenith, rays east and northwest, deep crimson, and one in east green.

Aurora, Ill.—Fine September, maples changing color.

Golconda, Ill.—Very pleasant month, some fogs but no frost.

Belvidere, Ill.—Aurora 24th, grand display, bright as moonlight, red and yellow streamers, luminous over three-fourths of the sky. No frost since April 29th; month unusually warm.

Wyanet, Ill.—Aurora 24th to 25th, illumined the whole heavens through the clouds, equal to the light of a full moon.

Sturgeon Bay, Wis.—Tornado with rain from south, followed by wind from southeast, with large hail, 7th; auroras 24th, 25th.

Manitowoc, Wis.—Auroras, beams to zenith 3d, arch 20th and 25th, with beams 17th, 18th, and 26th, with beams from east to west through zenith, and corona southeast of zenith, from which streamed white and purple rays in all directions, the whole sky in motion like sheet-lightning, 24th and a. m. 25th.

Geneva, Wis.—Aurora 24th, the greater part of the sky lighted with bright undulating waves of electricity. No dark bank or spots.

Rocky Run, Wis.—Auroras 4th, with smoky base, electric flashes to zenith, and electric clouds 15° south of zenith. On 24th to 25th, misty light, flashing to zenith, diffuse 18th, 20th, 28th and 30th.

Mosinee, Wis.—Wet last and this month; potatoes rotting in ground.

Baraboo, Wis.—Birds singing, and vegetation green.

Minneapolis, Minn.—Only one September in fifteen years as warm.

Sibley, Minn.—Splendid auroras all night 24th, 25th; could read by the red flashes, which seemed to move horizontally only twenty feet from the ground.

Koniska, Minn.—Slight frost 26th; vines unhurt; leaves not falling.

New Ulm, Minn.—Auroras, streamers, 3d, 18th; magnificent 24th to 25th; the entire horizon a waving fire; streamers from all sides formed a splendid corona in zenith; they became red after midnight, and floated southeast as before a wind, to be renewed by fresh electric flashes from the sides.

Clinton, Iowa.—Warmth very uniform; no frost; vegetation green.

Bowen's Prairie, Iowa.—A lovely month; no frost; springs very low.

Guttenberg, Iowa.—Pleasantest September in twenty-one years.

Boonesboro, Iowa.—Aurora, 24th, with arch, and red, white, blue, and yellow lights flickering upward rapidly. At 9.30 spread to 45° south, and formed corona 20° south of zenith, forming a vast tent of white, illumined by colors, red predominating. After midnight arch formed again, with scolloped upper edge, emitting flaming spires of red, blue, violet, and yellow, while cirrus clouds of white light danced to and fro like lightning.

Logan, Iowa.—More rain than in any month in eleven years.

Hematite, Mo.—Auroras, arch, corona, and white, yellow, green, and

crimson lights, 22d, 24th; both cast shadows. Another, but cloudy night, 26th. Month dry; plowing difficult.

Oregon, Mo.—Extreme damp is sprouting grain in stacks.

Corning, Mo.—Singular brilliant aurora 24th; double arch, with intensely dark bank, but stars seen through it; streamers from lower arch flashing in front of the upper and its streamers.

Atchison, Kans.—Month warm and foggy; no frost in September.

Williamstown, Kans.—Cutting corn 8th; slight meteoric shower 14th. Wettest September known here—stacks spoiling.

Baxter Springs, Kans.—Damp, no entirely clear day; month 2.27° warmer than last September.

Lawrence, Kans.—Cloudiest and foggiest month on record.

Council Grove, Kans.—Terrific thunder-storms very common to 23d.

Omaha Agency, Nebr.—Continuous rain three days, ending 23d; aurora, at times covering nearly the whole sky with red flashes of light and forming a fiery red corona, 24th.

Bellevue, Nebr.—Month very cloudy, 3° warmer than in 1869.

Nebraska City, Nebr.—Double-arch aurora 24th, corona 20° south of zenith, red glow in rapid flashes northeast and northwest. Month very damp.

New Castle, Nebr.—Heavy rains, with thunder and high winds, 5th, 6th, 7th, 25th, and 26th.

Coalville, Utah.—Heavy gales 3d, 9th; heavy frosts 16th, 17th; beautiful aurora, rosy glow and colored streamers, 24th.

Monterey, Cal.—Earthquake, 3 a. m. 2d; aurora, 23d, north-northeast, flame red 30° toward zenith, traversed by brighter and lighter-colored streamers moving slowly from east to west just above the horizon.

Chico, Cal.—Splendid aurora 24th, said to be only the fourth seen in California since 1849.

Deer Lodge City, Mont.—Severe frosts 16th, 22d, 23d; auroras 23d, pale white 25th, 26th, magnificent 24th—it covered two-thirds of the sky with brilliant red bands and flashes, and lasted all night.

Denver, Colo.—Rain for thirty-two hours to 22d; mountains covered with snow, killing frost 24th; aurora 24th, northeast, like daybreak on the horizon, pink-illumined clouds at zenith, and long rays of light from horizon to zenith.

Cathlamet, Wash.—No heavy rains nor equinoctial storm.

Eola, Oreg.—Brilliant aurora 24th, of changing brilliancy, moved from north to northeast, then to northwest, and again to northeast.

Astoria, Oreg.—A brilliant aurora 24th.

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